

EXTRALIFE RESEARCH

The ExtraLife Tinnitus Research Protocol

A Five-Layer Investigational Framework for Tinnitus Treatment
Combining Peptides, Stem Cells, Molecular Hydrogen, Neural Plasticity, and AI

Version 1.0 | March 2026 | Investigational | Not Medical Advice

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1. Executive Summary

Tinnitus affects over 740 million people worldwide. There are zero FDA-approved cures. Global research funding is a fraction of what a single pharmaceutical company spends on marketing. The science is promising but fragmented — scattered across journals in multiple languages, locked behind paywalls, and trapped in disciplinary silos.

This white paper presents the ExtraLife Tinnitus Research Protocol: a five-layer investigational framework that combines peptide therapy, stem cell treatment, molecular hydrogen inhalation, neural plasticity techniques, and AI-powered biomarker tracking into a single integrated approach.

The protocol is designed not as a treatment recommendation, but as a research hypothesis — a structured framework for the ExtraLife Collective to investigate, refine, and publish findings from. Every layer is grounded in published preclinical and clinical research. The integration of all five layers into a single protocol, with continuous AI analysis of participant data, is what makes this approach novel.

What if the cure for tinnitus already exists — scattered across 47 papers in 9 languages — and nobody has connected the dots?

[ExtraLife Collective connects them.](#)

2. The Problem: Why Tinnitus Has No Cure

Tinnitus is the perception of sound — typically ringing, buzzing, or hissing — in the absence of an external acoustic stimulus. It is not a disease in itself but a symptom with multiple possible etiologies:

- **Cochlear hair cell damage** — Noise exposure, aging, and ototoxic drugs damage the delicate hair cells of the inner ear. Once destroyed, human cochlear hair cells do not regenerate.
- **Auditory nerve inflammation** — Chronic inflammation in the auditory pathway can amplify neural signals and create phantom sound perception.
- **Maladaptive neural plasticity** — The brain compensates for reduced auditory input by increasing neural gain in the auditory cortex, effectively "turning up the volume" on internal noise.
- **Central nervous system hyperexcitability** — The limbic system and prefrontal cortex become involved, linking tinnitus to anxiety, stress, and sleep disruption in a self-reinforcing cycle.

The fundamental challenge: tinnitus is a multi-system condition being treated with single-mechanism interventions. Hearing aids address input. Cognitive behavioral therapy addresses perception. Masking addresses awareness. None address the underlying biology across all four layers simultaneously.

This protocol does.

3. The Hypothesis: A Multi-Layer Approach

The ExtraLife hypothesis is that tinnitus can be meaningfully reduced — and in some cases resolved — through a synchronized multi-layer protocol that addresses all four etiological pathways simultaneously:

Layer	Target	Intervention
1. Peptides	Tissue repair & nerve regeneration	BPC-157, TB-500, GHK-Cu, Selank
2. Stem Cells	Hair cell & synapse restoration	MSCs, exosomes, peptide priming
3. Molecular H2	Oxidative stress reduction	H2 inhalation, hydrogen-rich water
4. Neural Plasticity	Brain retraining	Psilocybin, neurofeedback, sound therapy
5. AI Tracking	Pattern recognition	Claudia AI biomarker analysis

The key insight: these layers are not independent. Peptide priming may enhance stem cell therapy outcomes. Molecular hydrogen reduces the oxidative stress that damages hair cells while other therapies work to repair them. Neural plasticity interventions retrain the brain while biological interventions restore the hardware. AI tracks it all and identifies patterns invisible to individual researchers.

4. Layer 1: Peptide Therapy

Peptides are short chains of amino acids that act as signaling molecules in the body. Four peptides show particular promise for tinnitus-related mechanisms.

BPC-157 (Body Protection Compound-157)

BPC-157 is a 15-amino-acid peptide derived from human gastric juice. Published preclinical research demonstrates its capacity to upregulate growth factor receptors (VEGF, EGF, FGF), promote angiogenesis, and accelerate tissue repair across multiple tissue types including nerve tissue.

Tinnitus hypothesis: BPC-157 may support cochlear nerve repair and reduce inflammation in the auditory pathway through its well-documented neuroprotective and anti-inflammatory mechanisms.

Research dosing range: 250–500 mcg/day subcutaneous. Intranasal delivery is under investigation for proximity to auditory structures.

TB-500 (Thymosin Beta-4)

TB-500 promotes cell migration, differentiation, and anti-inflammatory activity systemically. When stacked with BPC-157, the hypothesis is a synergistic effect: BPC-157 targets local repair while TB-500 supports the systemic healing environment.

Research dosing range: 2.0–2.5 mg twice weekly for 4-week loading phase, then weekly maintenance.

GHK-Cu (Copper Peptide)

GHK-Cu is primarily known for tissue remodeling, but emerging research suggests it modulates gene expression — specifically upregulating genes associated with tissue repair and downregulating genes associated with inflammation. For tinnitus, the question is whether GHK-Cu could support the extracellular matrix environment around damaged cochlear structures.

Research dosing range: 1–2 mg/day subcutaneous.

Selank

Selank is a synthetic anxiolytic peptide that modulates GABA and serotonin systems. Tinnitus has a massive anxiety and neural hyperexcitability component — the brain is "stuck" in a pattern of perceiving sound that is not there. Selank addresses the central processing side of tinnitus.

Research dosing range: 250–500 mcg intranasal daily.

Proposed Peptide Stack

- BPC-157: 250–500 mcg/day subcutaneous (or intranasal if delivery method validates)
- TB-500: 2.0–2.5 mg twice weekly (loading), then weekly (maintenance)
- GHK-Cu: 1–2 mg/day subcutaneous
- Selank: 250–500 mcg intranasal daily
- Cycle: 12 weeks on, 4 weeks off, reassess biomarkers and tinnitus severity

5. Layer 2: Stem Cell Therapy

Mesenchymal stem cells (MSCs) have anti-inflammatory and immunomodulatory properties. They can potentially support the regeneration of damaged cochlear cells, and MSC-derived exosomes carry signaling molecules that may be even more therapeutically relevant than the cells themselves.

Key Research Questions

- **Delivery route:** Intratympanic injection (directly into the middle ear) vs. IV systemic delivery — which achieves therapeutic concentration at the cochlea?
- **Exosomes vs. full MSCs:** MSC-derived exosomes may be less invasive and more targeted. Do they achieve comparable outcomes?
- **Peptide priming:** Does pre-treating with BPC-157 + TB-500 for 4–6 weeks before stem cell therapy improve engraftment and outcomes? This is a genuinely novel research question.
- **Source:** SVF (stromal vascular fraction) from adipose tissue as an accessible autologous MSC source.

Proposed Stem Cell Protocol

- **Phase 1:** 6-week peptide priming (BPC-157 + TB-500)
- **Phase 2:** MSC or exosome delivery (route TBD by research findings)
- **Phase 3:** 12-week peptide maintenance post-treatment
- Measure at baseline, week 6, post-treatment, week 12, week 24

6. Layer 3: Molecular Hydrogen Inhalation

Molecular hydrogen (H_2) is emerging as one of the most promising interventions for hearing-related conditions. Its unique advantage: H_2 is small enough to penetrate the blood-labyrinth barrier and reach the organ of Corti — something most pharmaceutical compounds cannot do.

Published Evidence

Fransson et al. (2021), *Frontiers in Cellular Neuroscience*: In a guinea pig model, a single dose of H_2 inhalation after noise exposure resulted in significantly lower ABR thresholds at 2 weeks, with significant preservation of outer hair cells across the entire cochlea. H_2 protected inner hair cell synaptic structures.

Kurioka et al. (2014), *Neuroscience Research*: Guinea pigs exposed to 1.0% and 1.5% H_2 inhalation for 5 hours/day after noise exposure showed better hearing threshold recovery and significantly higher outer hair cell survival compared to untreated controls.

Taura et al. (2022), *Frontiers in Neuroscience*: A double-blind randomized controlled trial in humans with sudden sensorineural hearing loss found that the H₂ group had hearing thresholds of 39.0 dB vs. 49.5 dB in controls at 3 months — a clinically meaningful difference.

Fransson et al. (2017), *PMC*: H₂ inhalation reduced cisplatin-induced ototoxicity — protecting against drug-caused hearing damage and tinnitus at functional, cellular, and subcellular levels.

Chen et al. (2022), *PMC*: In nasopharyngeal carcinoma patients with radiation-induced hearing loss, 4 weeks of hydrogen-oxygen inhalation showed significant improvement in air-conduction hearing thresholds.

Mechanism of Action for Tinnitus

- H₂ selectively scavenges hydroxyl radicals ($\cdot\text{OH}$) — the most cytotoxic reactive oxygen species
- Reduces lipid peroxidation, DNA oxidation, and mitochondrial damage in cochlear cells
- Anti-inflammatory properties reduce chronic inflammation in the auditory pathway
- Penetrates the blood-labyrinth barrier that blocks most drugs from reaching the inner ear
- Supports mitochondrial membrane potential and ATP production in surviving hair cells
- May protect surviving synaptic structures between hair cells and auditory nerve

Delivery Methods

- **H₂ inhalation via nasal cannula:** Clinical-grade machines produce 2–3% H₂ in air at 500–1000 mL/min. Protocols range from 1–4 hours daily. Machines like the InhaleH2 or Promolife H2 system are available for clinical and home use (\$3,500–\$6,500).
- **Hydrogen-rich water:** Supplemental tablets (e.g., Quicksilver Scientific H₂ Elite) dissolve in water to deliver ~10 ppm molecular hydrogen. More accessible for daily use, though lower therapeutic concentration than inhalation.
- **Combined protocols:** Inhalation during hyperbaric oxygen therapy sessions creates a powerful dual antioxidant environment. This is available at Eminent Wellness in Scottsdale.

Proposed H2 Protocol

- H₂ inhalation: 1–2 hours daily via nasal cannula (2–3% concentration)
- H₂ water: 1–3 tablets daily in water (for days between inhalation sessions)
- Combined with hyperbaric oxygen: 1–2 sessions/week at Eminent Wellness
- Duration: Continuous throughout the 24-week protocol

7. Layer 4: Neural Plasticity & Cognitive Retraining

While Layers 1–3 address the biological hardware, Layer 4 addresses the software — the brain's maladaptive response to altered auditory input.

Psilocybin Microdosing

Emerging evidence suggests psilocybin promotes neuroplasticity — the creation of new neural connections. For tinnitus, the hypothesis is that microdosing could disrupt the maladaptive neural patterns that sustain phantom sound perception, while reducing the anxiety that amplifies tinnitus awareness.

Proposed protocol: 0.1–0.3g every 3 days (Fadiman protocol) for 8 weeks. Only where legally available.

Neurofeedback

EEG-based neurofeedback targeting auditory cortex activity can train the brain to reduce the neural overactivity associated with tinnitus. Weekly sessions during the optimization and integration phases.

Sound Therapy

Customized notched sound therapy based on individual tinnitus frequency. Tinnitus Retraining Therapy (TRT) protocols. Daily listening sessions (30–60 minutes) to gradually habituate the auditory system.

HRV Biofeedback & Nervous System Regulation

Heart rate variability biofeedback for nervous system regulation. Tinnitus and the stress response are deeply linked — cortisol elevation worsens tinnitus perception. Daily 10-minute HRV training sessions, tracked via wearable.

Grounding & Nature Immersion

The Scottsdale desert experience: pre-dawn Sonoran Desert hikes with the care team. Emerging evidence suggests nature exposure reduces cortisol and improves autonomic nervous system regulation. Not a metaphor — a clinical observation documented with every protocol participant.

8. Layer 5: AI-Powered Biomarker Tracking

Claudia — ExtraLife's multi-agent AI system — is not a chatbot. It is the research instrument that makes this entire protocol possible at scale.

Individual Level

- Full biomarker panel tracking: inflammatory markers (hsCRP, IL-6, TNF-alpha), hormones (cortisol rhythm, testosterone, thyroid), metabolic markers
- Tinnitus Handicap Inventory (THI) scored weekly
- Audiograms at baseline and every 6 weeks
- HRV daily tracking via wearable
- Sleep quality, anxiety scores, and subjective tinnitus severity

Population Level

This is the unique contribution of the ExtraLife Collective: Claudia analyzes anonymized data across the entire participant cohort. Which peptide combinations show the most improvement? What biomarker profiles predict response? Are there subgroups that respond differently? Individual studies are small. Aggregate data across hundreds of members running variations of this protocol creates a dataset that does not exist anywhere else in tinnitus research.

9. The Integrated 24-Week Protocol

Phase 1: Discovery & Priming (Weeks 1–6)

- Comprehensive baseline: biomarker panel, audiogram, THI, HRV baseline
- Begin peptide priming: BPC-157 (250–500 mcg/day SC) + TB-500 (2.5 mg 2x/week)
- Begin Selank (300 mcg intranasal daily)
- Begin H₂ inhalation (1–2 hours daily) + H₂ water
- Daily HRV biofeedback (10 min)
- Scottsdale visit (optional): Eminent Wellness baseline treatments

Phase 2: Intervention (Week 6–7)

- Stem cell intervention: MSC or exosome delivery (route determined by research)
- Continue all peptides
- Continue H₂ inhalation
- Optional: H₂ inhalation during hyperbaric oxygen session

Phase 3: Optimization (Weeks 7–18)

- Continue BPC-157 + TB-500 (weekly maintenance)
- Add GHK-Cu (1–2 mg/day SC)
- Begin psilocybin microdosing protocol (where legally available)
- Weekly neurofeedback sessions
- Daily notched sound therapy (30–60 min)
- Continue H₂ inhalation
- Biomarkers + THI every 3 weeks
- Claudia AI analysis and protocol adjustments

Phase 4: Integration & Taper (Weeks 18–24)

- Taper peptides (reduce frequency, then discontinue)
- Continue mind practices: HRV, sound therapy, grounding
- Continue H₂ water (maintenance)
- Final comprehensive panel: biomarkers, audiogram, THI
- Claudia generates 24-week comprehensive report
- 6-month follow-up assessment

10. Measurement Framework

Rigorous measurement is what separates this from wellness speculation. Every claim must be backed by data.

Measure	Instrument	Frequency
Tinnitus severity	Tinnitus Handicap Inventory (THI)	Weekly
Hearing thresholds	Pure tone audiogram + ABR	Baseline, 6w, 12w, 18w, 24w
Inflammation	hsCRP, IL-6, TNF-alpha	Baseline, 6w, 12w, 18w, 24w
Hormones	Cortisol (diurnal), testosterone, thyroid	Baseline, 12w, 24w
Nervous system	HRV (daily via wearable)	Continuous
Oxidative stress	8-OHdG, MDA	Baseline, 12w, 24w
Sleep quality	Pittsburgh Sleep Quality Index	Baseline, 6w, 12w, 18w, 24w
Anxiety	GAD-7	Baseline, 6w, 12w, 18w, 24w
Subjective tinnitus	Visual Analog Scale (0–10)	Daily
Biological age	Epigenetic clock analysis	Baseline, 24w

11. The ExtraLife Collective

This protocol is not designed to be run by ExtraLife alone. It is designed to be investigated, refined, and published through the ExtraLife Collective — a community-powered research network.

Five Layers of Collaborative Intelligence

- **Discovery Engine:** Claudia monitors 200+ research sources across 12 languages daily for tinnitus-related findings.
- **Pattern Recognition:** AI analyzes anonymized member data at population scale to identify patterns invisible to individual researchers.
- **Expert Council:** World-class researchers in auditory science, stem cell therapy, peptide research, and molecular hydrogen validate AI-generated hypotheses.
- **Community Research:** Four participation tiers: Observer (free), Contributor (member), Funder (patron), Researcher (expert).
- **Research Bounties:** Community-funded studies with full transparency. Every dollar tracked. Every result published open-access.

Active Research Bounties

- BPC-157 for tinnitus — cochlear nerve repair investigation
- Stem cell therapy — MSC/exosome delivery optimization
- Psilocybin and neural plasticity — maladaptive pattern disruption
- Peptide protocol development — multi-peptide stack optimization
- AI-accelerated discovery — novel compound identification
- Molecular hydrogen — H₂ inhalation for auditory protection (NEW)

How to Participate

Join the ExtraLife Collective at extralife.ai/collective. Fund specific research bounties at extralife.ai/fund. Speak to Claudia at **(866) 428-7106** or chat at extralife.ai/claudia.

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