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Dear friends and colleagues,

As we approach the end of 2024, we take a moment to reflect on a year marked by significant strides in tinnitus research. This newsletter aims to share the milestones we've reached, highlight upcoming meetings for the year ahead, and celebrate the vibrant community driving progress in this field.

The newsletter is divided into three sections:

First, **Prof. Sven Vanneste**, a leading voice in auditory neuroscience, **shares key achievements** that have deepened our understanding of tinnitus and its treatments.

Second, we provide a **preview of noteworthy events** and developments on the horizon for **2025**.

Finally, we turn the **spotlight on the tinnitus research community**, showcasing innovative ideas, perspectives, and ongoing projects of established experts and emerging talents alike.

This newsletter is part of the TRI Academy's wider mission to disseminate tinnitus-related information to clinicians and researchers. It would not have been possible without the contributions of researchers in the tinnitus field. We extend our heartfelt thanks to all of them for their dedication and insights. We also wish to express our appreciation to Sara Demoen for the beautiful graphics and to the TRI Academy team for their continuous support!

If you are interested in contributing to our next newsletter, we invite you to get in touch at info@tinnitusresearch.org.

We hope you enjoy reading!

JD Hairston -- Dr. Sook Ling Leong -- Lauren Ralston -- Milena Engelke



"State of the Union" – Advancements in Tinnitus Research

*As 2025 begins, we reflect on a year of extraordinary progress in tinnitus research. **Prof. Sven Vanneste**, a leading figure in auditory neuroscience, emphasizes several milestones that have advanced our understanding and treatment of this complex condition.*

One landmark achievement was the publication of Neuromod's pivotal controlled trial, the results of which had led to the FDA approval of the Lenire bimodal neuromodulation device. Lenire is the first device approved for the treatment of tinnitus in the United States and demonstrated clinically meaningful improvements for 79.4% of trial participants [1], signaling a transformative moment for treatment accessibility. Innovative academic research in bisensory tinnitus treatment approach has also gained momentum. The Kresge Hearing Research Institute at the University of Michigan explored a bisensory approach combining sound and electrical stimulation in a double-blind randomized clinical trial, showing promise for symptom relief [2]. These studies underscore the potential of multimodal solutions for tinnitus, offering new treatment pathways that could improve outcomes for many patients.

Large-scale studies, such as the Apple Hearing Study, further enriched the field by collecting data from over 160,000 participants, offering critical insights into tinnitus prevalence and management strategies. Results revealed that

77.6% of individuals reported having experienced tinnitus at some point, with about 15% reporting it as a daily phenomenon. Notably, the study highlighted popular management strategies, such as the use of noise machines and nature sounds, which help people cope with the condition [3].

Looking forward, Prof. Vanneste highlights other exciting directions:

- **Genetic and Biomarker Research:** Identifying genetic underpinnings and biomarkers to personalize treatments.
- **Pharmacological Innovation:** Trials investigating neuroprotective and anti-inflammatory compounds such as the Kv7 potassium channel activators which target neural hyperactivity.
- **Neuroimaging Studies:** Utilizing fMRI and EEG to provide insights into intricate tinnitus brain networks.

Recently, the Rainwater Foundation has funded the launch of a [Tinnitus Detect \(TIDE\) consortium](#) - a multisite and cross-atlantic initiative aimed at identifying neural patterns that could serve as neural markers.

- **AI and Machine Learning:** Enhancing tinnitus classification and treatment prediction for tailored care.

These advancements underscore the importance of multidisciplinary collaboration as we strive for effective, long-term solutions.



Tinnitus News & Upcoming Events

TRI Academy: Online Seminar Series and Other Events 2025

- **Online Seminar Series: Tinnitus & Cerebellum**
Februar 19, 2025
Speaker: Lilian Mennink & second speaker to be announced
- **Online Seminar Series:** topic to be announced
March 19, 2025
Speakers to be announced
- **“Meet the experts” at TRI Seoul 2025**
May 18, 2025, 6pm
- **Early Stage Researcher (ESR) event** (online)
June 18, 2025

Tinnitus Awareness Week 2025

Monday, February 3 – Sunday, February 9

A global effort to raise awareness and provide support for those living with tinnitus. Join online campaigns and local events to amplify the conversation.

Key Conferences in 2025

- **Association for Research in Otolaryngology (ARO)**
February 22-26, 2025
(aro.org)
- **American Academy of Audiology Conference – New Orleans, USA**
March 26–29, 2025
(audiology.org)
- **World Tinnitus Congress & XIV International Tinnitus Seminar – Warsaw, Poland**
April 13–15, 2025
(tinnitus2025.com)
- **Annual TRI Conference – Seoul, South Korea**
May 15–18, 2025
Connect with global researchers and clinicians.
Presenting Author Registration: February 1, 2025
General Registration: Ongoing (tri2025seoul.org)

- **2nd International Conference on Pharmacology & Gene Therapy for Tinnitus**
October 2, 2025 (UK-based virtual event)
(hashirtinnitusclinic.com)
- **International Conference on the Management of Tinnitus and Hyperacusis Patients**
Date TBA – University of Iowa
(medicine.uiowa.edu)
- **Tinnitus UK Conference**
Date TBA – online
(tinnitus.org.uk)

Awareness Days 2025

- **World Hearing Day**
March 3, 2025
(who.int)
- **International Noise Awareness Day**
April 23, 2025
(noiseawareness.org)

Training & Classes

- **Tinnitus Masterclass – Birkbeck College, University of London**
March 10–12, 2025
(hashirtinnitusclinic.com)



Voices from the Field: Tinnitus Researchers' Perspectives on Progress and Priorities

2024 has brought remarkable discoveries and thought-provoking discussions in tinnitus research. Here's what some of the field's voices shared about this year's advancements and priorities for the future:

Advances in Understanding Tinnitus Mechanisms and Neurophysiology

Tinnitus research has made strides in understanding its neurophysiological mechanisms, with improved insights into brain imaging and neuroplasticity revealing new treatment targets [4]. *"This year has seen growing interest in genetic research and the potential for personalized therapies [5],"* says **Prof. Lieber Li**. These efforts are complemented by a push for precision in mapping tinnitus-related brain networks and subtyping the condition to better tailor interventions.

Prof. Fatima Husain from the University of Illinois Urbana-Champaign explains, *"Understanding the unique neural signatures associated with different tinnitus profiles is key to developing more personalized and effective treatments."*

Namitha Jain, a PhD student in Prof. Husain's lab, expands on this idea: *"Tinnitus involves large-scale brain networks linked to self-perception, cognition, and emotion, beyond just the auditory system. Identifying objective biomarkers could revolutionize care by enabling personalized therapies and improving outcome predictions. Emerging machine learning applications in brain imaging show great promise, and I'm excited to see how the next wave of discoveries will transform tinnitus care."*

The distinction between tinnitus and tinnitus disorder, as **Prof. Berthold Langguth** explains, represents an important conceptual shift: *"Tinnitus refers to the conscious awareness of a noise without an external source, while tinnitus disorder involves associated emotional distress, cognitive dysfunction, and behavioral changes."* Current genetic research supporting this differentiation is paving the way for more targeted interventions [6].

Predicting Onset, Progression, and Risk Factors

Dr. Lise Hobeika's research identifies key predictors of tinnitus onset and progression. *"Understanding these predictors allows us to intervene earlier and potentially improve outcomes for those most at risk,"* she explains. Her

findings highlight hearing health as the primary risk factor for tinnitus perception, while hearing health, mental health, and sleep disorders predict not only severity but also progression [7].

Dr. Hobeika's POST questionnaire (Prediction Of the Severity of Tinnitus) offers a practical tool for identifying individuals at higher risk [7], and her current work on brain connectivity patterns promises to advance diagnostic precision.

Innovative and Emerging Treatments

Prof. Langguth highlights recent advances in treatment delivery: *“Advances such as internet-based Cognitive Behavioral Therapy (iCBT) are helping to close treatment accessibility gaps [8], while emerging methods like MRI-based neurofeedback show promise in refining therapeutic outcomes [9].”*

PhD student **Sophia Li** highlights the potential of cochlear implants (CIs) for tinnitus relief. *“Studies, including ours, have shown that cochlear implants can significantly reduce tinnitus perception. Traditionally, device activation occurs 3–4 weeks after surgery, but our study compared tinnitus outcomes in patients whose implants were activated within 24 hours. While tinnitus initially increased in the immediate 24 hours post-surgery—likely reflecting intracochlear changes and auditory pathway modulation—it continued to abate steadily over the following month.”* She adds, *“Ongoing studies will focus on factors such as tinnitus duration and individual responses to the implant to better understand the effectiveness of early activation.”*

These advancements are complemented by innovative projects like Prof. Patricia Perez's Safe and Sound Therapy (SST) initiative, highlighted by **Alberto Bernal**, PhD student. *“In this project, funded by the Carlos III Institute, we aim to provide a treatment consisting of five one-hour sound therapy sessions and one structured counseling session, conducted separately, all in person,”* Bernal explains. The study focuses exclusively on patients with an extreme phenotype, those with a Tinnitus Handicap Inventory (THI) score above 56. Additionally, their genomes will be analyzed to identify potential variants that might help explain their condition.

Refining Clinical Guidelines and Behavioral Interventions

Efforts to standardize treatment pathways and make therapies more accessible remain critical. On a larger scale, Taiwan's first Tinnitus Treatment Guidelines, developed through the collective efforts of many specialists, are paving the way for evidence-based clinical practice. **Prof. Che-Hsuan Lin**, who assisted in their development, emphasizes that these guidelines encompass diagnostic advances, pharmacological interventions, and novel therapies like neuromodulation, with plans for validation through collaborative research.

Behavioral approaches are also evolving. Speaking at this summer's TRI Conference in Vancouver, **Prof. Peter Vernezze** emphasized the potential of mindfulness: *"Mindfulness interventions hold great potential, but without consistency in application, their full benefits remain untapped."* He advocates for shorter, streamlined protocols inspired by chronic pain research to make mindfulness more accessible and effective for tinnitus patients.

Interdisciplinary approaches continue to yield encouraging results. **Cosima Lukas**, PhD student in Jena, Germany, highlights the bidirectional relationship between tinnitus distress and depression, emphasizing the importance of addressing both in treatment [11]. Her team's research demonstrates that an interdisciplinary, evidence-based treatment approach provides stable treatment effects, persisting up to five years post-treatment [12].

Looking Ahead: Priorities for the Future

The economic burden of tinnitus remains a growing concern. Epidemiologist **Dr. Carlotta Jarach** has spotlighted the economic toll of tinnitus, estimating annual out-of-pocket costs at on average over €560 per individual, with severe cases reaching almost €1,500 [13]. Her work highlights the pressing need for accessible, effective interventions.

Looking to the future, Tinnitus Quest envisions hosting a groundbreaking conference in 2025 to foster high-risk/high-gain research and critical evaluation. *"We aim to bring innovative thinkers into the field - like Peter McNaughton, who has brought fresh insights to tinnitus via his past work in pain research - and encourage bold approaches to silencing tinnitus,"* says **Hazel Goedhart**, Executive Board Member of Tinnitus Quest.

As **Prof. Vanneste** concludes, the future lies in leveraging multidisciplinary expertise—spanning neuroscience, genetics, technology, and patient communities. With continued dedication, we move closer to alleviating the burdens of chronic tinnitus and improving the lives of those affected.

A Tiny Intruder: An Unlikely Cause of Tinnitus

Cause of tinnitus found – at least in one case! In a rather unusual turn of events, a 42-year-old patient's sudden-onset tinnitus was traced back to an uninvited guest – a live ant, which had made its way into her middle ear through a pre-existing eardrum perforation [14]. A successful surgical intervention removed the tiny intruder, and the patient is now symptom-free. Perhaps it's time to check your patient's ear for ants before reaching for that tinnitus treatment!

Together, we shape the future of tinnitus research.



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