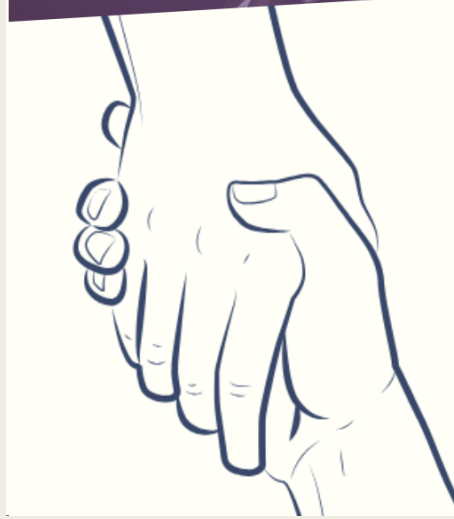




## CARE for Misophonia 2025

CARE for Misophonia Day 2025 is the third annual open-access virtual misophonia research symposium where you can learn about the latest in research about misophonia through casual conversations with the researchers themselves!

**August 28th, 2025**

**11am-5:00pm Eastern US Time**

*Virtual event. Drop in anytime. Recorded sessions.  
Open to all. No charge. Registration required.*

# Auditory Mechanisms of Misophonia

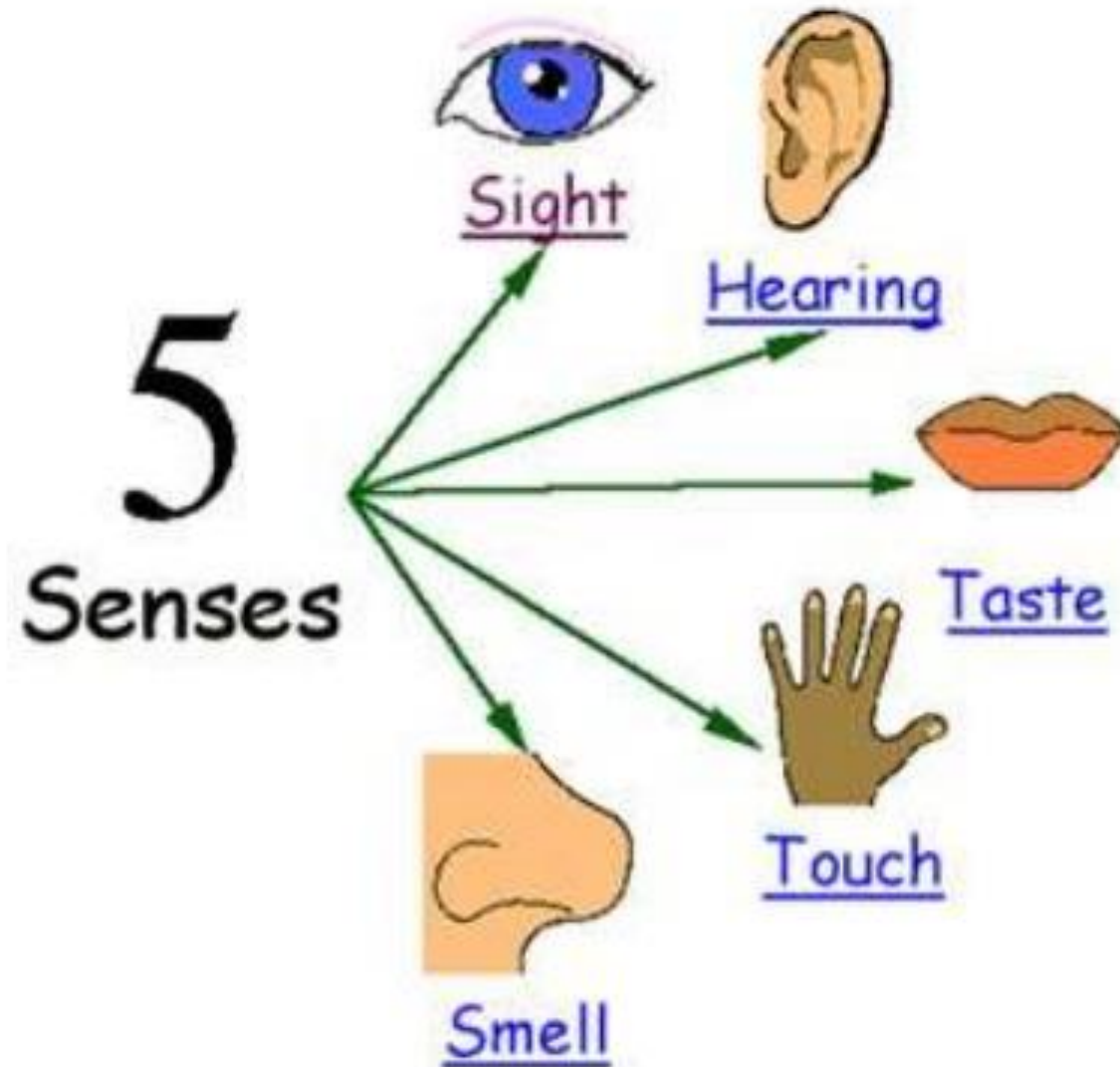
**Dr. Prashanth Prabhu**

Assistant Professor in Audiology  
All India Institute of Speech and Hearing  
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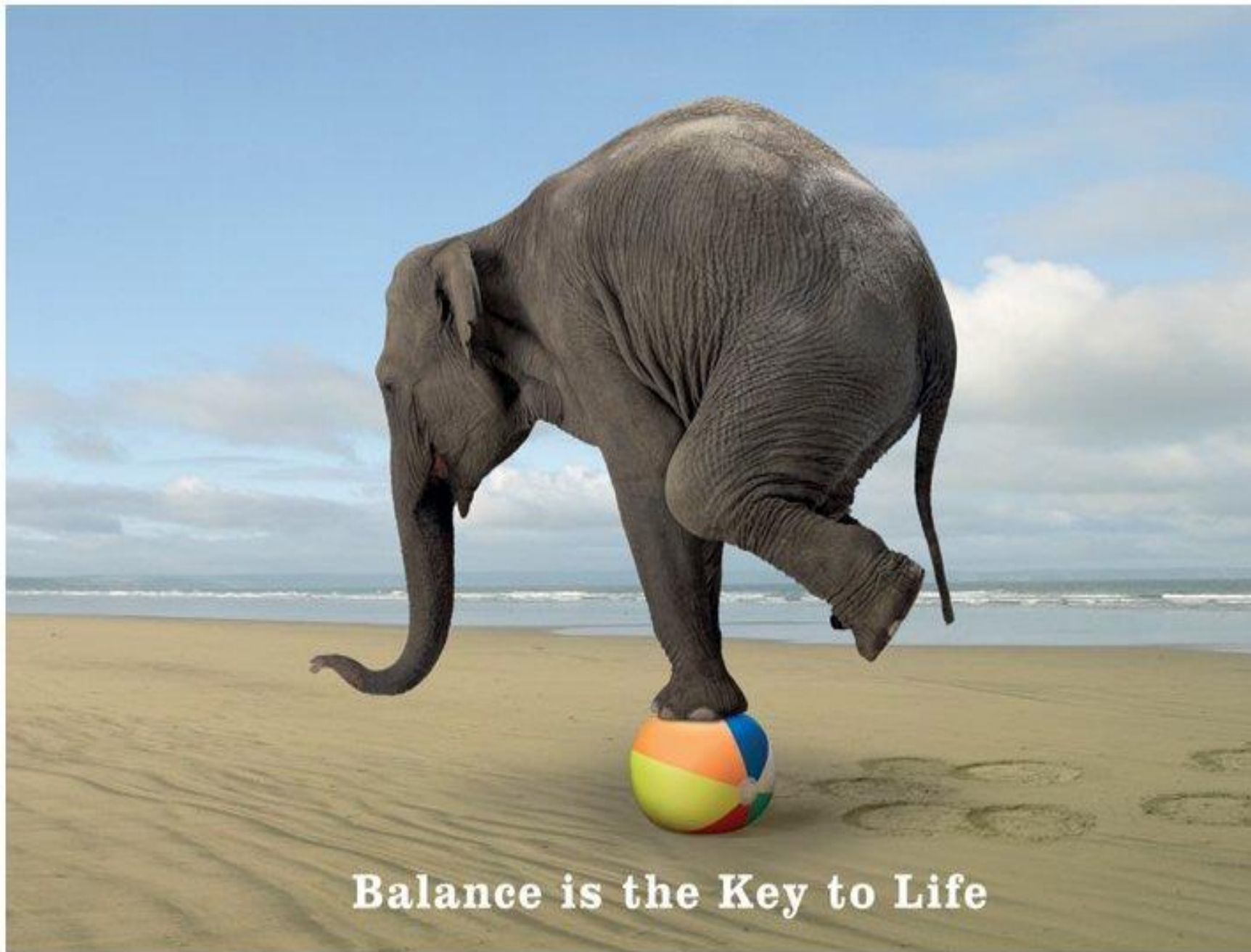
# Agenda

- Ears and its functioning
- Auditory efferent system
- Results of our study
- Future directions

# OUR FIVE SENSES

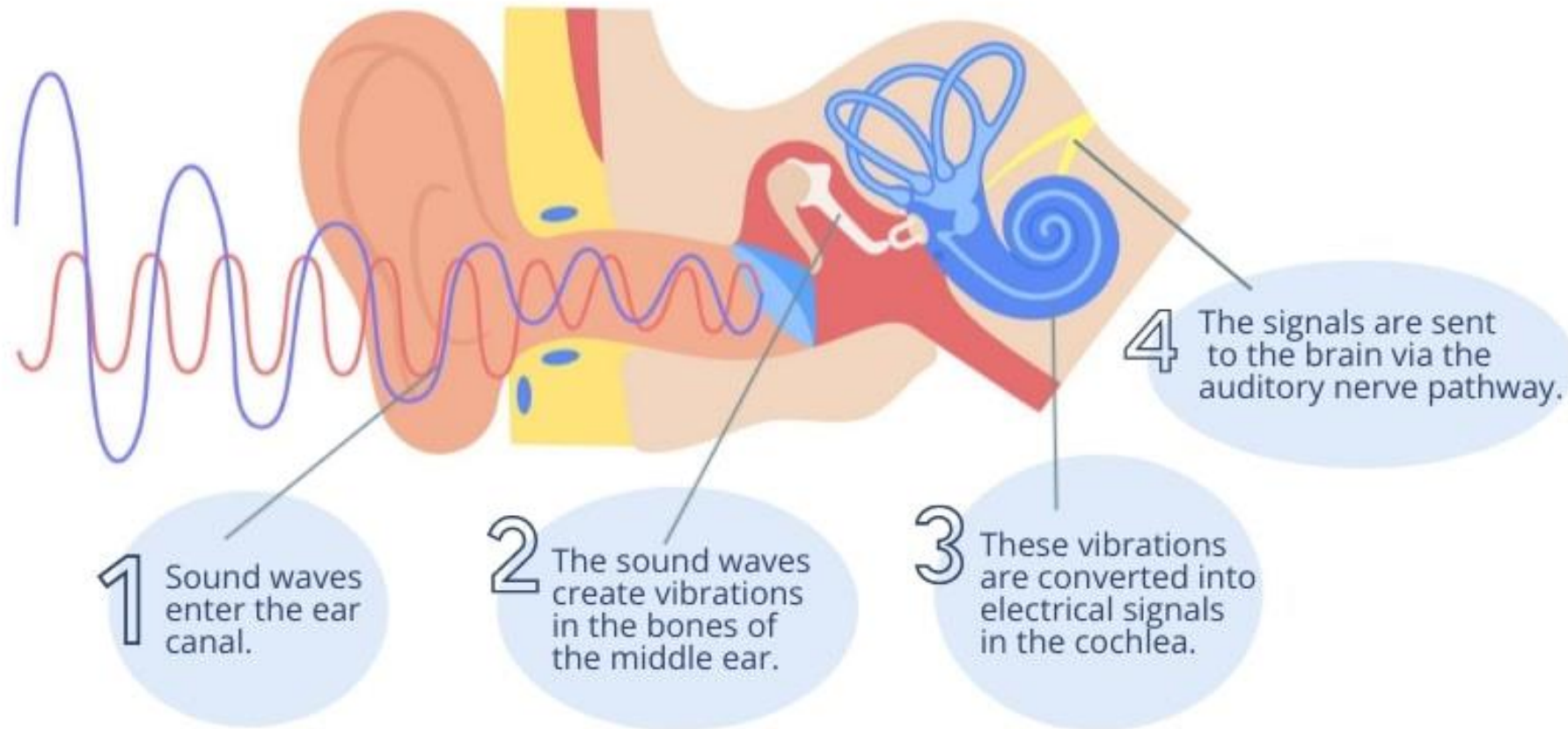








# How we hear: The basics



# Auditory Efferent System Functioning

Auditory & Vestibular Research

## Research Article



## Auditory Efferent Pathway Functioning in Individuals with Misophonia

Sajana Aryal<sup>1\*</sup>, Prashanth Prabhu<sup>2</sup>

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Use your device to scan  
and read the article online



**Citation:** Aryal S, Prabhu P. Auditory Efferent Pathway Functioning in Individuals with Misophonia. Aud Vestib Res. 2024;33(4):339-48.

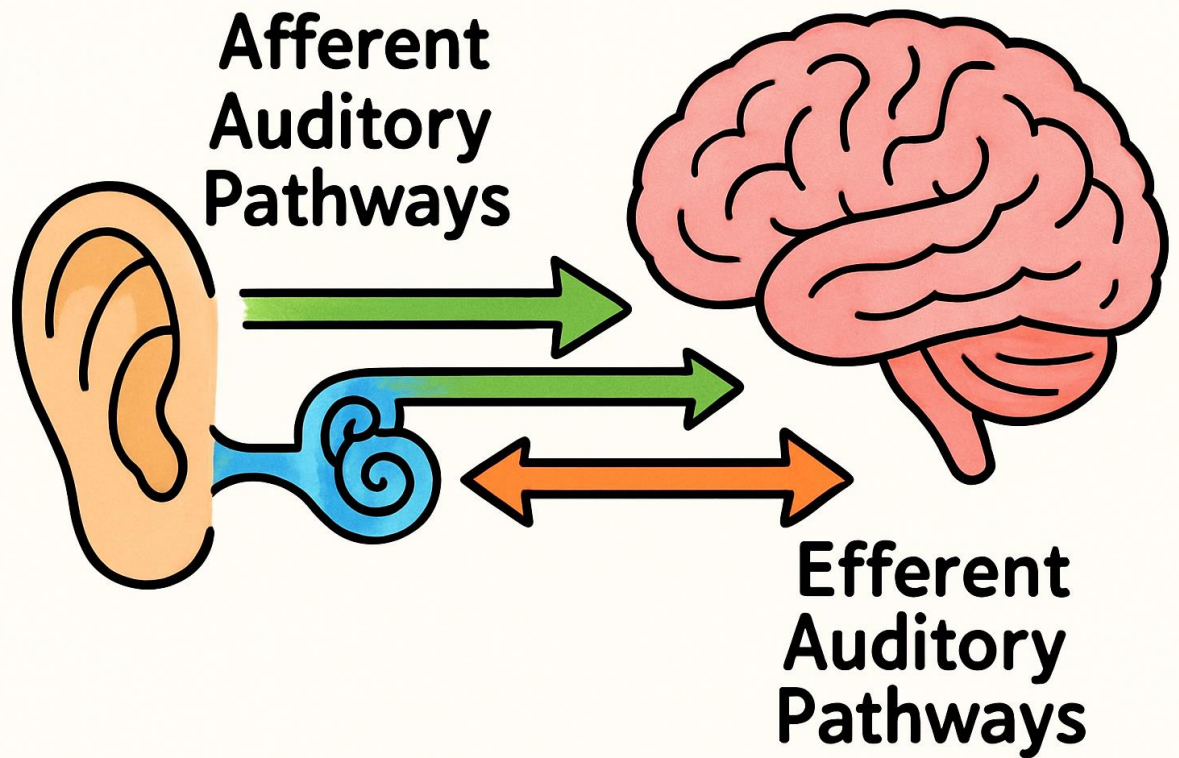
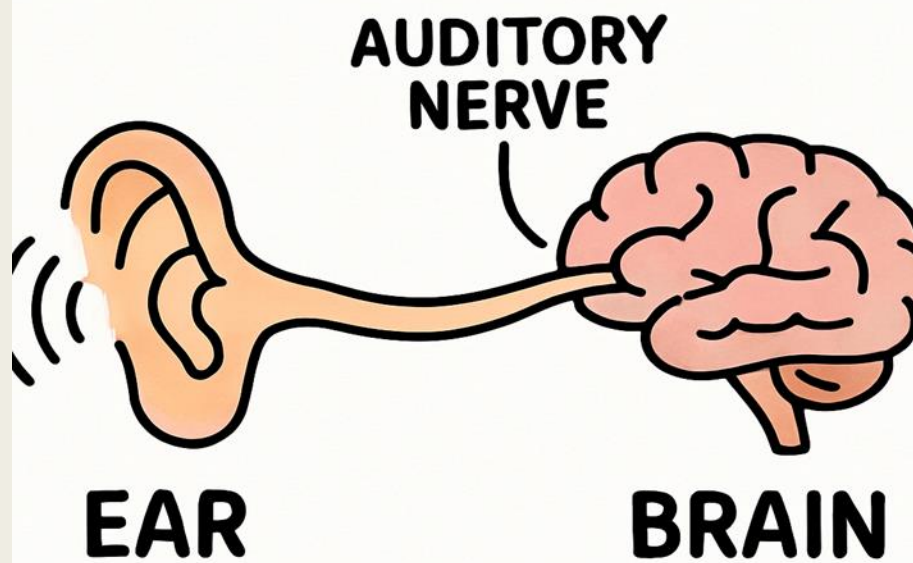


<https://doi.org/10.18502/avr.v33i4.16652>

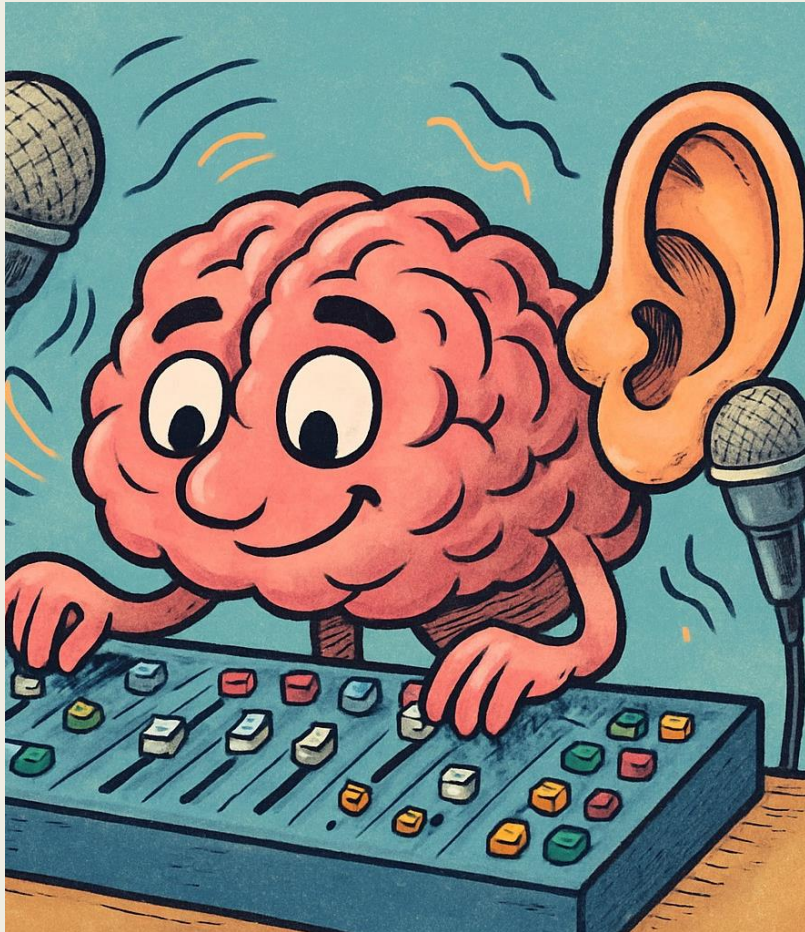
## Highlights

- Misophonia is a little-understood disorder from an audiological perspective
- The study shed light on the underlying auditory mechanisms involved in misophonia
- The outcomes provide crucial insights for the investigation of misophonia

CARE Day 2025



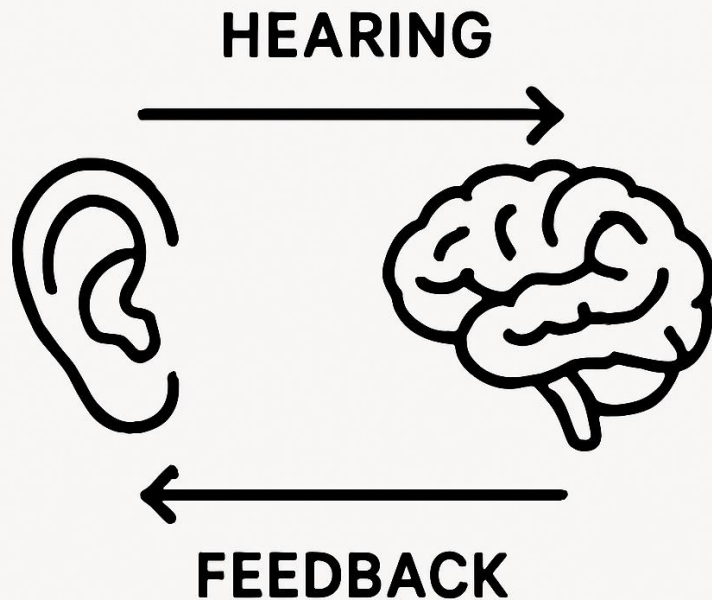
# “How our brain helps our ears handle sounds”



- "Think of your ears as microphones and your brain as the sound engineer in a recording studio."
- The microphones (ears) pick up all sounds, but without the sound engineer (brain), everything would be too loud or chaotic.
- The auditory efferent system is like the engineer turning down or balancing the volume.

# A Two-Way Street:

## Ears ↔ Brain

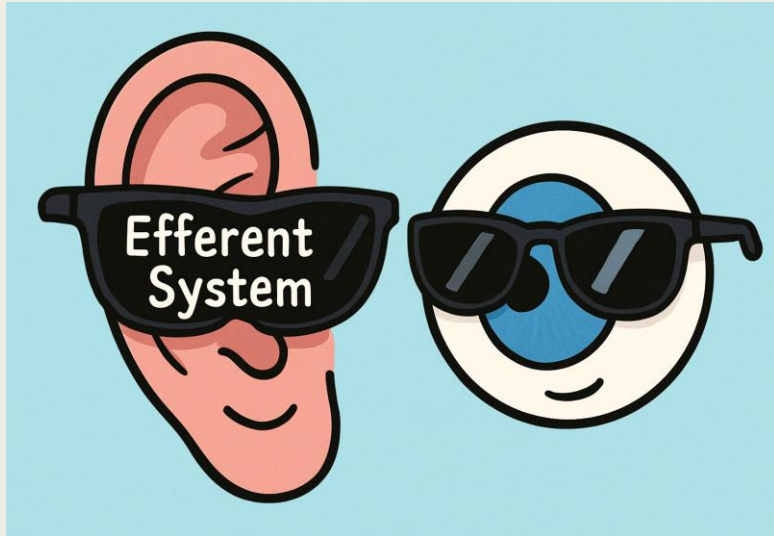


- It's a **feedback pathway**: signals go not only from the ear to the brain, but also **back from the brain to the ear**.

- Purpose: to **tune, protect, and filter** incoming sounds.

- Example: When you're in a noisy restaurant, your brain tells your ears to reduce background chatter so you can focus on your friend's voice.

# Efferent System - Our Built-in Volume Control



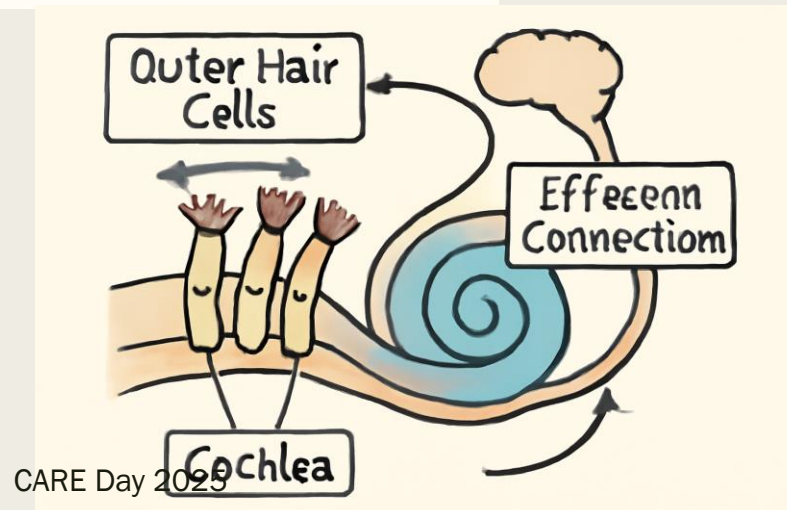
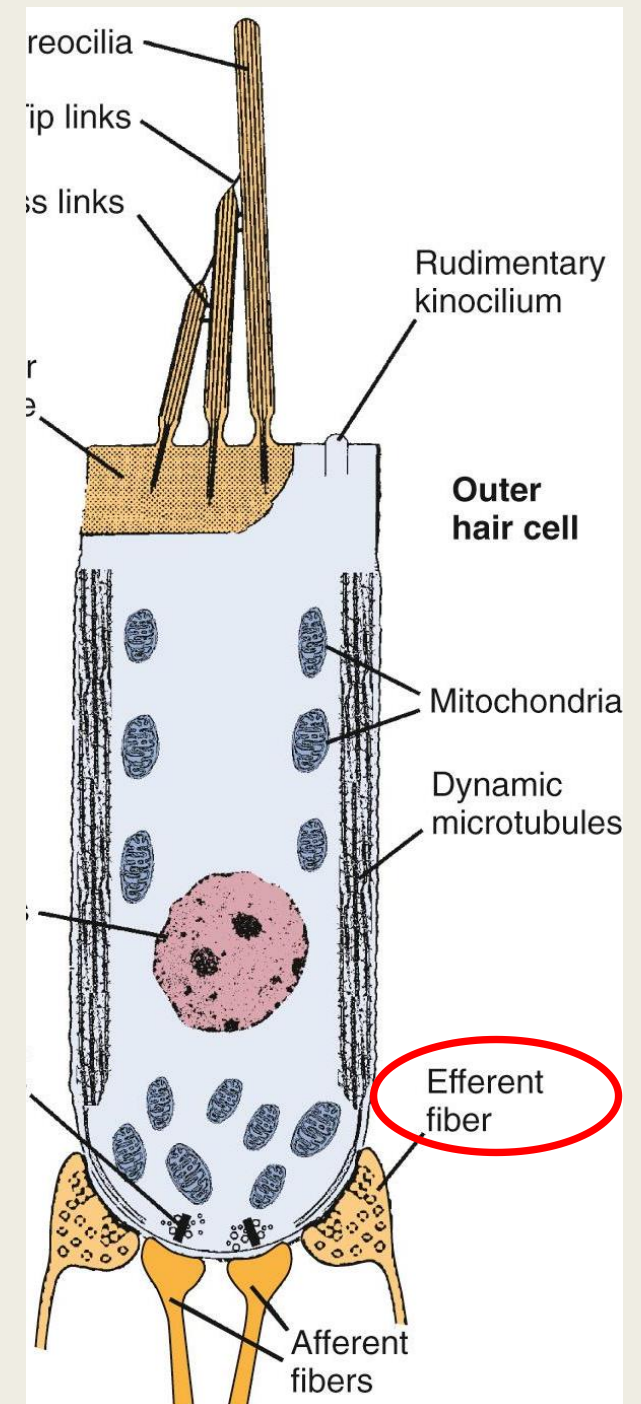
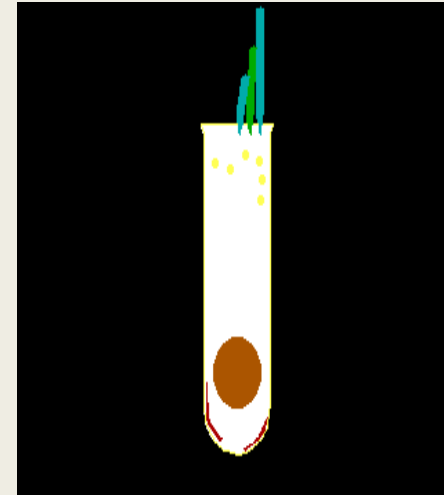
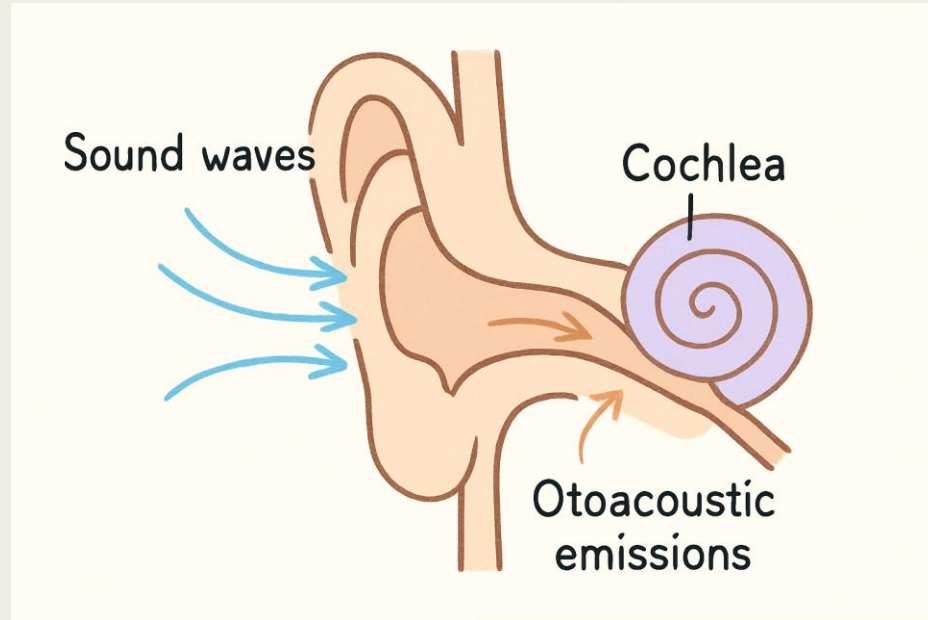
- Protects from loud sounds (like automatic sunglasses for the ears).
- Helps us focus (like at a party where we tune in to one voice).
- If you're anxious, this system may not filter as well, making even soft sounds feel very intrusive

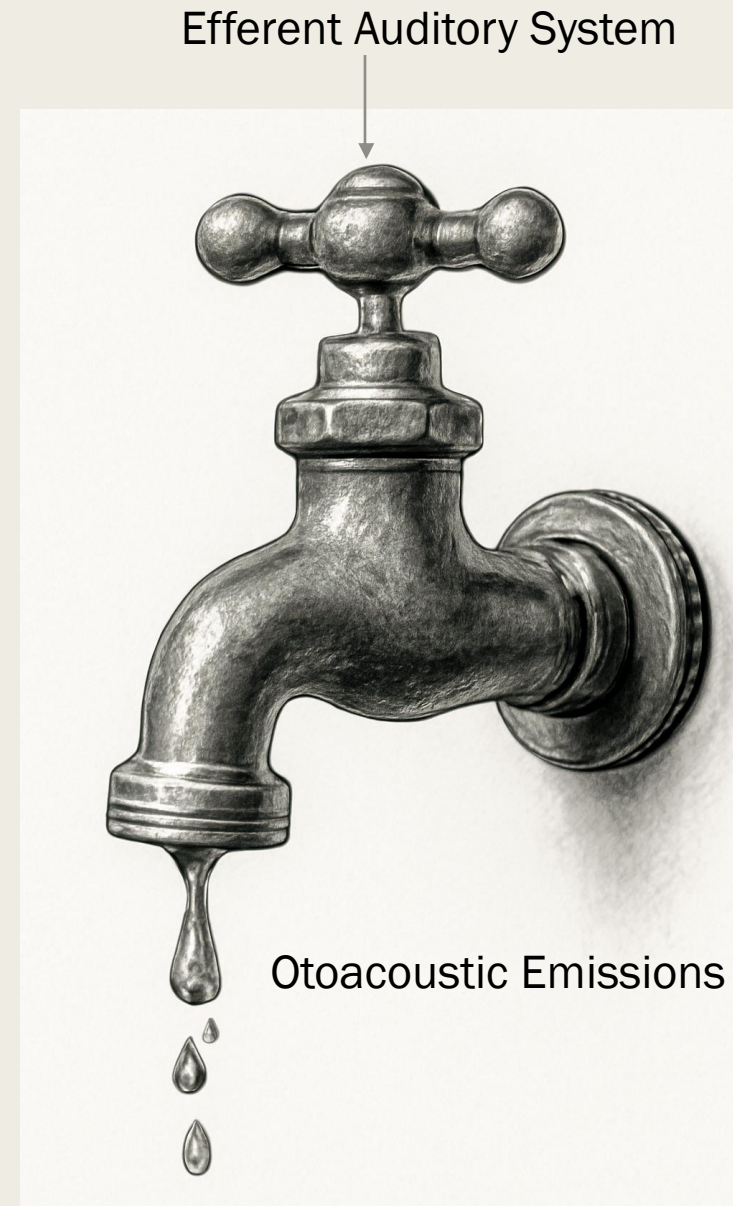
# When the Volume Control Works Differently



- This “volume control” and “filtering” system may not work the same way.
- The system doesn’t turn down certain sounds (chewing, tapping, breathing).
- Like having a super-sensitive microphone that picks up even the smallest noises.
- This isn’t a weakness, but a difference in how the ear–brain loop processes sound.

# Contralateral suppression of Otoacoustic emissions





# Objectives of the study

- To evaluate efferent auditory functioning in individuals with and without misophonia using contralateral suppression of Transient Evoked Otoacoustic emissions

# Methods

- 30 controls
- 30 individuals with misophonia
  - *15 – Mild*
  - *15 - Moderate-severe*
- No tinnitus or hyperacusis

# Results

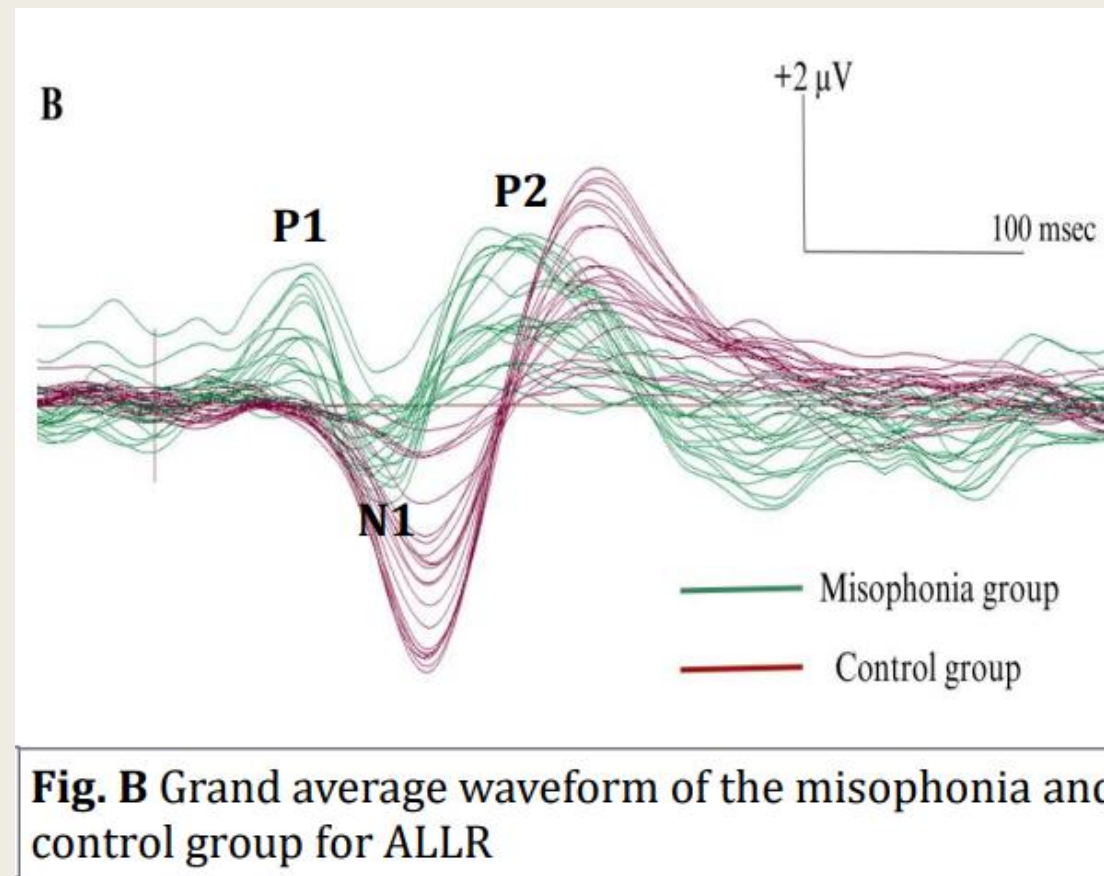
- No significant difference between the two groups
- Efferent auditory system functioning is intact

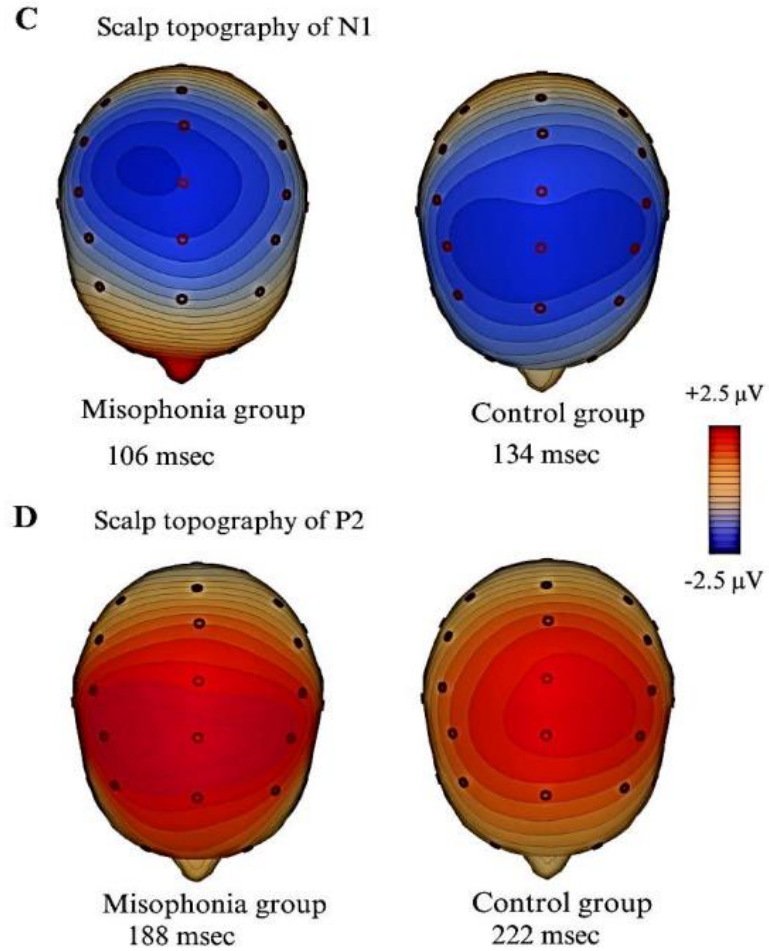
# Research at our lab

- We are looking at the BRAIN (AUDITORY CORTEX)
- POSSIBLE CONNECTIONS

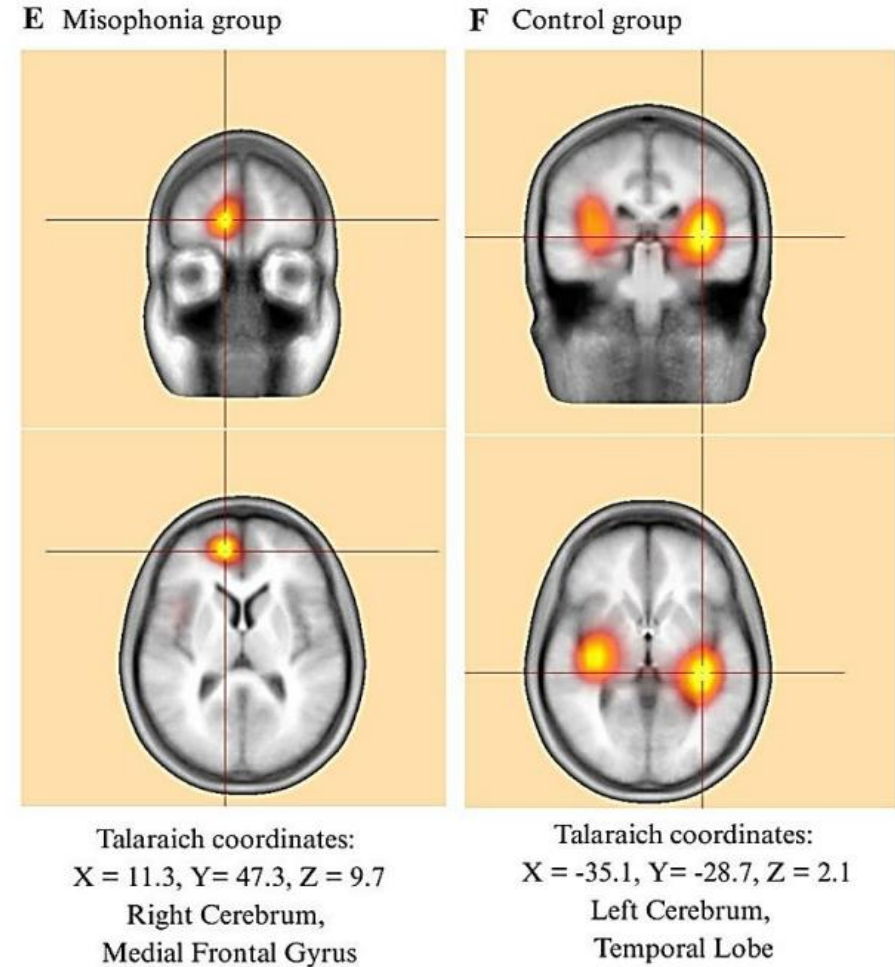
# Multichannel ALLR

Karupaiah and Prabhu (2025)





**Fig. C, D:** Scalp topography distribution of N1-P2 of ALLR between the misophonia and control groups



**Fig. E, F:** Source Analysis in misophonia and control groups

# Training the Sound Engineer



- The efferent system isn't broken, we need to train the sound engineer
- With techniques, the “engineer” (brain) can learn better control.

# Contact

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*Thank  
you*

