

# WEBSITE WHITE PAPER

## From Verification to Rehabilitation - Integrating Real-World Listening into Evidence-Based Audiology

### A Clinical Perspective

Dr Rony Ganguly, CEO & Founder, Pindrop Hearing

---

### Executive Summary

Contemporary audiology has made significant advances in the objective assessment and optimisation of hearing aid performance. Evidence-based protocols, including Real Ear Measurements (REM), Speech in Noise (SiN) testing and validated fitting procedures, have improved clinical outcomes and raised standards of care internationally.

However, as hearing rehabilitation continues to evolve, increasing attention is being given to a different question: **how well do objective clinical outcomes translate into everyday listening experiences?**

Recent developments, including Neurotone AI's integration of the Revised Hearing Handicap Inventory (RHHI) into the Lace Pro rehabilitation platform, reflect a broader shift towards combining objective verification with patient-reported outcome measures.

This paper explores why real-world listening should be considered an important component of comprehensive hearing rehabilitation, alongside traditional clinical assessment.

### The evolution of evidence-based audiology

Over the past two decades, hearing healthcare has undergone a profound transformation.

Objective verification techniques such as REM are now widely regarded as the gold standard for confirming that hearing aids are delivering prescribed amplification. Numerous studies have demonstrated that verification improves fitting accuracy and contributes to better patient outcomes compared with first-fit manufacturer settings.

Similarly, Speech in Noise testing has become an increasingly important assessment tool, reflecting the reality that understanding speech in complex acoustic environments is one of the most common reasons adults seek hearing care.

Collectively, these approaches have strengthened evidence-based practice and improved consistency of care.

Yet despite these advances, clinical success cannot be defined solely by objective measurements.

## **The growing importance of functional outcomes**

Research increasingly distinguishes between **impairment**, **activity** and **participation**.

An audiogram measures impairment.

Speech testing measures auditory performance.

Neither fully captures how hearing loss influences participation in everyday life.

This distinction is recognised within the World Health Organization's International Classification of Functioning, Disability and Health (ICF), which encourages healthcare professionals to consider not only physiological impairment but also functional ability and participation in society.

Within audiology, this has led to increasing use of validated patient-reported outcome measures (PROMs), including the Hearing Handicap Inventory and, more recently, the Revised Hearing Handicap Inventory (RHHI).

These instruments are not intended to replace objective assessment.

Instead, they complement it by measuring outcomes that matter directly to patients, including listening effort, communication confidence and social participation.

The recent recommendation by the US National Academies of Sciences, Engineering and Medicine (NASEM) to incorporate patient-reported outcomes into hearing healthcare reflects this growing emphasis on person-centred rehabilitation.

## **Beyond verification: preparing patients for everyday listening**

Objective verification confirms that hearing aids are functioning correctly.

Patients, however, experience hearing in environments that are considerably more complex than the consulting room like restaurants, busy roads, family celebrations, public transport and workplaces. Each presents different acoustic challenges and raises an important clinical consideration.

If rehabilitation aims to optimise communication in everyday life, should patients have the opportunity to experience realistic listening environments before they leave the clinic?

Not because traditional verification is insufficient but because it can be strengthened through functional assessment.

## **Applying these principles in clinical practice**

Several years ago, Pindrop Hearing introduced **The Sound Lounge** as part of its rehabilitation pathway.

The concept was straightforward.

To complement established objective assessment by allowing patients to experience representative listening environments within a controlled clinical setting.

Restaurant conversations, traffic noise, social gatherings and in-car listening can all be recreated, enabling clinicians to assess hearing aid performance while patients experience realistic acoustic conditions.

This provides opportunities for refinement that are difficult to achieve using objective verification alone.

Small programming adjustments can be made immediately while patients experience different listening environments, and clinicians can confirm that hearing aids remain comfortable, secure and appropriately positioned before patients return home.

Importantly, The Sound Lounge was never intended as an alternative to REM or Speech in Noise testing.

It was developed to complement these established clinical procedures by extending rehabilitation into functional listening.

## **Rehabilitation beyond the clinic**

Real-world listening does not end when patients leave the consulting room.

Auditory rehabilitation continues over weeks and months as individuals adapt to amplified sound in their own environments.

This is where digital rehabilitation platforms are becoming increasingly valuable.

Neurotone AI's recent integration of the Revised Hearing Handicap Inventory into Lace Pro represents another step in this direction.

By combining auditory training with validated patient-reported outcome measures, clinicians gain additional insight into how rehabilitation is progressing between appointments.

Rather than relying solely on periodic clinical reviews, patient-reported outcomes provide longitudinal information regarding communication, listening effort and participation.

Together with objective verification, this creates a more complete understanding of rehabilitation.

## **Looking ahead**

The future of hearing rehabilitation is unlikely to be defined by a single technological breakthrough.

Instead, it will be characterised by better integration.

Objective verification.

Speech in Noise assessment.

Real-world listening.

Auditory rehabilitation.

Patient-reported outcome measures.

Each provides different information.

Together, they offer clinicians a richer understanding of successful rehabilitation than any single assessment can provide in isolation.

As our profession continues to evolve, the challenge is not to replace established clinical practice but to build upon it.

Evidence-based audiology has always embraced innovation where it demonstrably improves patient care.

Integrating real-world listening experiences and patient-reported outcomes into rehabilitation pathways represents a natural extension of that philosophy.

Ultimately, the goal remains unchanged.

Not simply to optimise hearing aid performance.

But to optimise communication, participation and quality of life.

*August 2026*