Canadian Audiologist
The Official Publication of the Canadian Academy of Audiology

Amplification

Published September 9th, 2026

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Contributions for this column will be considered from anyone who works in the hearing health care field. Its orientation will be translational—how does one get an innovation from the textbook to our clients' ears. For those who may be interested in contributing gems from their clinical experience please contact Calvin Staples directly at GrandRiverAudiology@gmail.com.

Welcome to the new Canadian Audiologist column – Amplification. As most hearing healthcare professionals spend their time fitting, adjusting, repairing, and counselling about the benefits of amplification, we at CAA thought this would be a simple yet beneficial column for our members. In preparing for this first submission I thought about how hearing aids are dispensed and what serves as best practice - I landed on amplification verification. I am sure many clinicians agree verification is a necessary and "must do" step in the process of dispensing hearing aids, but I wonder is there a standard practice for verification; when in the amplification dispensing process is verification completed, what averages are routinely used vs real ear measurements, is Real Ear Measure (REM) vs Simulated REM (S-REM) the method of choice, should clinicians verify demo hearing aids, how often is verification completed when hearing aids are dispensed, which prescribed targets are most commonly used? All the above questions, and I am sure there are more, seem relevant to today's current hearing healthcare market.

Historically, REM has not always been routine practice. The Mueller and AudiologyOnline

publications have routinely posted use rates of 34-53%. Sadly, the poor use rates mean that 50%+ of all hearing aids dispensed lack a clinical measure to ensure the best outcomes. The amplification prescription process is designed to ensure appropriate restoration of audibility, safe maximum power output settings, realistic expectation counselling, and appropriate hearing aid use (CASLPO). Real Ear measures should be completed for every hearing aid fitting. In fact, over the past 20+ years, probe microphone measurements have demonstrated the need for amplification verification to ensure that what is presented in the manufacturer's software is occurring in the ear canal (Plumford 2018). With an industry-average return rate of 6-20%, the need for verification may not only facilitate proper benefit and use but also help keep hearing aids in ears (Javid 2025; Sygrove 2025; Jorgensen, L. E. 2016). There is potentially good news – the American Academy of Audiology (AAA) reported an uptick in use – in 2020. AAA, survey data reported a 68% consistent use rate.

As outlined above, historical (non-Canadian) data suggest that clinicians do not routinely complete verification procedures. Over the years, Real Ear verification must have grown; there should be Canadian data to support its increased use, as it is considered best practice. The ability to objectively quantify the output of a hearing aid in a patient's ear canal is essential to patient outcomes and, thus, amplification benefit. Additionally, the hearing health care professional must recognize the importance of REM verification – the addition of Openfit hearing aids should enhance the clinician's skill. Verification equipment has improved significantly over the years, enabling verification of Openfit Hearing Aids, Binaural REM, CROS/BiCROS, OTCs, Advanced/Adaptive Features, Auto-REM, and much more. The use of verification equipment cannot only support best outcomes – restoring audibility with a smooth and broadband frequency response, it allows for the clinician to instill a patient-centred approach (Scollie 2023). Dr. Scollie suggests a mutual listening experience that allows the patient to guide the clinician to the sound experience best suited to their listening needs. The process of co-listening engages the patient in the experience and allows for the clinician to validate hearing aid benefit.

In 2022, the Audiology Practice Standards Organization (APSO) released an update on verification and validation. Specifically for this column, the interest is in verification. The standard identified that hearing aids should be fit using a prescriptive method and assessed for performance across various speech input levels, with the maximum power output (MPO) set to maximize the new dynamic range. Clinicians might make user-specific adjustments that can deviate from the target to ensure individual sound-quality preferences. However, a clinician cannot achieve the primary goal of the fitting – restore audibility, without completing probe tube measures. The cascading impact of inappropriately fit hearing aids not only reduces the positive outcomes that all clinicians clamor for when discussing the benefits of amplification but also diminishes the value of clinical expertise. Beyond limiting beneficial outcomes, I would argue many of the features used to facilitate patients experience in challenging environments are based on properly fitted and verified hearing aids. Clinics and clinicians alike are inundated with manufacturer marketing materials citing improvements in hearing for listening in background noise – each new hearing aid seems to demonstrate an improvement in signal-to-noise ratio. However, to achieve positive patient outcomes in the most challenging listening situations, the foundational step of a good initial first fit – a prescriptive target is used and verified – is required. When patients routinely report that hearing in background noise is the number one benefit of hearing aids, the need for a good first fit is essential (Bridges et al., 2012).

Decades after introduction, hearing aid verification still plays a critical role in ensuring the best possible patient outcomes. One of the primary limiting factors to hearing aid success is sound

issues; verification lays the groundwork for good sound quality (Deaver, M., & Jorgensen L. 2024). Another limiting factor is whether appropriate amplification counselling is provided; hearing aid verification systems can also support patient counselling and facilitate patient success (Deaver, M.; & Jorgensen L. 2024). Modern hearing aid verification systems easily enhance the patient experience through counseling screens with various overlays that facilitate explanations and informational counseling – the use rates of such tools are unknown. One desirable result of this introductory column is the hope of gaining Canadian data on hearing aid verification practices. As the market continues to shift, particularly with the entry of Over-the-Counter hearing aids, audiologic skills such as verification will be essential for distinguishing professional from transactional practice in audiology.

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