One student noted an increase in the use of REM by audiologists after they experienced a decrease in return visits when they performed REM.
Stop the Madness: Verify Hearing Aid Fittings! Hope for the Future?*

There is a significant body of literature on the value of using real-ear measurements in conjunction with a prescriptive method to verify and optimize hearing aid fittings, as summarized in the document on Hearing Aids for Adults (ASHA) and the best practice guidelines from the American Academy of Audiology (Academy), which state that “prescribed gain (output) from a validated prescriptive method should be verified using a probe-microphone approach that is referenced to ear canal SPL” (Academy, 2006, p. 26).

Other evidence in favor of using REM to verify hearing aid fittings includes increased patient satisfaction and fewer return visits (Kochkin et al, 2010) and more positive perceived quality and value (Amlani, Pumford, and Gessling, 2016). Additionally, multiple studies have demonstrated that using manufacturer “first-fit” methods, even ones that claim to use prescriptive methods, provide insufficient/inappropriate amounts of gain (Aazh and Moore, 2007; Sanders et al, 2015) and poorer speech recognition in noise (Leavitt and Flexer, 2012).

Despite the evidence indicating that real-ear measurements are the best method to verify audibility, comfort, and tolerance—and the guidelines from both the Academy and ASHA—only about 40 percent of the practitioners who dispense hearing aids use REM (Mueller and Picou, 2010). Of greater

---

**FIGURE 1.** Percentage of use of REM for adult hearing aid fittings at off-campus facilities (? denotes the respondent was not certain how frequently REM was used).
concern, however, may be the fact that the number of practitioners who use REM to verify hearing aid fittings has remained relatively stagnant since 1995 (Mueller and Picou, 2010).

Surveying Our Students
As a university clinic, we have a particular focus on educating students regarding evidence-based practice (EBP) and use REM in 100 percent of our pediatric and adult hearing aid fittings. Students routinely perform REM during all adult and pediatric fittings during the first two years of their doctor of audiology (AuD) program in the university clinic. As is typical, third- and fourth-year students work at off-campus locations to continue their clinical education with audiologists in diverse settings.

We decided to ask our students about their experience with REM at those locations. During the spring of 2018, we surveyed all of our third- and fourth-year AuD students about the use of REM with adult and pediatric patients at their off-campus placement sites. Thirteen of 14 students returned the surveys, providing data on 30 different sites. Three sites did not dispense hearing aids and were excluded, leaving a total of 27 sites. Of these, 16 sites were in Indiana and 11 sites were in seven other states (Illinois, Michigan, Missouri, North Carolina, Ohio, Texas, and Wisconsin).

Figure 1 shows the frequency of use of REM for adult hearing aid fittings at the off-campus sites. Consistent with previous surveys, only 41 percent of sites always use REM during adult hearing aid fittings and 9 percent use it some of the time. Forty-six percent of sites never use REM, although half of these sites have the equipment available to do so.

Figure 2 shows the data for pediatric hearing aid fittings. A positive finding here is that a slightly larger proportion of sites (58 percent) use REM for pediatric fittings at off-campus facilities. Of these, 11 percent always use REM, 5 percent use it some of the time, and 26 percent never use REM. (The ? denotes the respondent was not certain how frequently REM was used.)

FIGURE 2. Percentage of use of REM for pediatric hearing aid fittings at off-campus facilities (denotes the respondent was not certain how frequently REM was used).
Stop the Madness: Verify Hearing Aid Fittings! Hope for the Future?

She (preceptor) had been in the field for 20+ years and was confident in her “eyeballing” it and trusting the majority of manufacturer’s first fits. We use the first fit and occasionally do functional gain in the booth. If the child was capable of talking and giving feedback, changes would be made, but that never happened when I was there. They (audiologists) said it was too expensive and took too much time. They feel the manufacturer software does a good job on its own (from a pediatric facility).

We really only put in the audiogram into the appropriate hearing aid (HA) manufacturer software and used what the manufacturer suggested. The “Help” portion in the software was used for specific complaints. Program hearing aids using a fitting formula. Adjust according to patient report. The audiologist wants REM equipment and has tried for a couple of years to get it, but the hospital has not approved it.

They use REM for pediatric fittings but not for adult fittings. I believe that the feeling is that REM is not necessary for adults because of the ability to make adjustments according to patient report.

My supervisors believed that subjective report was more reliable than “a machine” telling them how to fit the hearing aids. Instead, they relied on the manufacturer’s first fit.

One audiologist used REM almost 100 percent of the time. The other two audiologists used REM when convenient, but did not go far out of their way to use it. However, I began when they first started using the equipment and, throughout the semester, all of the audiologists noticed a decrease in return visits when REM was used at fittings. So, by the end of the semester, all of the audiologists were trying to use REM when able.

I mostly did diagnostics there, so I am not sure how often they used it. They had equipment, however I was teaching them how to use it! Hopefully they’re comfortable with it now.

**TABLE 1.** Student responses to the question: “If not using REM, describe the procedure used for hearing aid verification.”
Dear New Generations of Audiologists,

Although fewer than half of our generation of audiologists has embraced REM, we believe the next generations can do better, and so we write you this: We have confidence in you. Your doctoral education has empowered you with foundational knowledge in hearing science, advanced clinical skills, and an understanding of how to use research to guide your independent clinical decision-making.

Expect the best from yourselves and for your patients. Use data to drive decision-making in your workplace. Use evidence-based, clinically relevant research to shape your care of patients. Your patients and your profession are counting on you.

With much respect,
Older Generations of Audiologists

Lata A. Krishnan, PhD, is a clinical professor in the Department of Speech, Language, and Hearing Sciences at Purdue University in West Lafayette, Indiana.

Jennifer M. Simpson, AuD, is a clinical professor in the Department of Speech, Language, and Hearing Sciences at Purdue University in West Lafayette, Indiana.

The Positive Changes Ahead

Instead of ending with a list of trite excuses as to why audiologists don’t perform REM (such as a lack of time and funds), and repeating that these practices are unacceptable and ethically questionable, we were inspired by a recent alumna who shared a success story.

During the previous three years at her first job, she gathered data regarding hearing aid fittings at the practice’s multiple offices, shared current research regarding satisfaction and lower return rates, and persuaded the administrators and physicians in the practice to approve the purchase of a portable REM unit to be used in multiple locations at their offices.

We are also encouraged about the future by the level of engagement among our students regarding this and other professional issues, and their leadership roles on the national level in the Student Academy of Audiology (SAA) and the Purdue Chapter of the SAA.

Based on these examples of advocacy for patient care and the profession, we offer here our thoughts to the next generation of audiologists for positive change in the future.
Stop the Madness: Verify Hearing Aid Fittings! Hope for the Future?*

References


