



# Technology's Reach Across Generations

By Maggie Kettler

**A**s audiologists, we are acutely aware of the many advances in technology that are not only shaping the hearing aid and cochlear implant industries, but the audiological practice as well. There is a consistent theme in the literature, at meetings, and from the manufacturers themselves—technology is changing quickly and it is essential that the audiology community keep current. In addition to hearing aid and cochlear implant technologies changing, there are also many new accessory options that are available and interface with the devices.

These assistive technologies can provide solutions to unique environmental, communication, social, or vocational problems that cannot be solved with amplification alone.

Audiologists must determine who can truly benefit from the technologies that are available, in addition to learning how to interface all the devices that a patient needs, even as the technology continues to evolve. While the benefits of available technologies are indisputable, the challenge is assisting patients in understanding the range of technologies available and then helping patients understand and fully use those technologies so they can receive the greatest benefits.

One of the more daunting challenges for audiologists is to assess the individual technological needs of patients across the lifespan. Infants who are newly identified with hearing loss, school-age children, college students, young professionals, or

retired individuals each have different auditory and communication demands. As such, the technological requirements vary across the lifespan. So while the benefits of the available technologies are indisputable, it is a challenge identifying the devices patients need so that they may gain the maximum benefit.

Working with very young children, the technology questions begin early from parents, family, and teachers—when should families and schools consider FM/DM (digital modulation) technology for the patient? Should a wireless microphone be considered? What is the difference between an FM/DM system and a wireless microphone? Do the differences justify the out-of-pocket price difference? At what age should streaming the

child's tablet to the hearing aids or implants be considered? How can we assess the quality of the sound from the streaming devices? Will the technology in the classroom, such as the Smartboard, interfere with the varying technologies that we recommending? What remote options will the child need their hearing aid or cochlear implant? Of course, the answers to all of these questions are based on the needs of each individual, and no single recommendation will work for all patients. Even as answers to these questions are being explored, new technology can emerge or the child's needs change.

Adult users of hearing aids and cochlear implants have different technology needs than children. FM/DM systems, TV streamers, and/or telephone streamers can help individuals connect at home, in restaurants, in churches, or in the workplace. The U.S. workplace/workday is changing, and the use of technologies is becoming both common and important for anyone to succeed. As more workplaces are moving to remote meetings and teleconferencing, connecting with technology becomes imperative to everyone, including the employee with hearing loss.

Even everyday communication can benefit from the use of assistive technologies coupled to hearing aids. For example, enabling people with a hearing loss to use Bluetooth technology to hear phone conversations bilaterally, in hands-free mode, can provide patients with a more natural hearing experience, and can decrease barriers for the employee at home and work. With the increased ability to stream directly to hearing aids, individuals will be less concerned with finding an amplified telephone, or finding a telephone that is compatible with hearing aids or cochlear implants, and they can feel confident

that they will be able to hear well using their typical program. Adults are also able to use mini-microphone technology to experience ease of listening in challenging listening situations in both the office and at home. In the home environment, assistive technology allows an adult patient to be more connected with his or her family. The ability to stream television or music can allow the patient to watch a show with family or friends without complaints that the television is too loud. Being able to connect to the many Bluetooth options can decrease isolation for the patients, allowing for easier communication at large family gatherings or smaller everyday routines, such as watching a movie as a family.

Often the older generations are overlooked as candidates for accessories, as the cost and complexity of assistive devices are considered barriers. There is the sense that patients often feel overwhelmed with the general care and use of the hearing devices, much less adding on extra accessories. As with any age, it is most important with this population to consider the person's individual lifestyle before making technology recommendations. As lifestyles change with age, i.e., empty nest, retirement, increased travel, etc., so do their hearing needs.

There are many technologies that can address the needs of patients who have a wide range of hearing needs. Wireless microphone technology can help in more challenging listening situations like in a restaurant or riding in the car. For those persons with limited mobility, and who may spend a significant amount of time watching television, a television streamer may help them understand what is said and improve quality of life. A telephone streamer may allow someone to use the telephone to call family members,

schedule appointments, or call the doctor for medical advice, allowing for greater independence. Telephone streamers, mini-microphones, and remote options have few controls and are often more easily manipulated by patients with dexterity concerns, again allowing a patient to independently control his or her devices and promote self-sufficiency.

Given the advances in technology over the past decade, it is hard to imagine what options will be available for people with hearing loss in the future. Even five years from now, the technology available to treat hearing loss or assist in communication will look very different. What is certain is that the evolution of technology options will continue. As with all technologies, the cost of devices for hearing care will decrease and availability/usability will increase. More options will be available for more patients. Audiologists will need to continue to develop individualized treatment plans based on lifestyles and challenges, and these technologies can greatly impact a patient's overall hearing success. Technology is not just for Millennials. Technology is accessible and beneficial across the generations. 🎧

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*Illustration by Johanna van der Sterre.*