



ASSOCIATED
AUDIOLOGISTS

TOP 10 ADVANCES IN HEARING AID TECHNOLOGY

Top 10 Advances in Hearing Aid Technology

Your hearing isn't the only thing you lose when you suffer from diminished auditory capabilities. This condition can slowly turn your life upside down. Basic communication can become difficult, and you may start to miss important contextual clues in your everyday life. This can reduce your ability to complete common tasks and limit you in ways you never thought possible.

While many focus on the physical elements of hearing loss, the psychological impact can be just as devastating. You may feel embarrassed when you can't quite make out what someone is saying, or you may shy away from conversations altogether. Frustration, melancholy, and tension are all common feelings among individuals with hearing loss, and these emotions can take a toll on your overall well-being.

Unfortunately, many suffer in silence. Hearing loss is among the most common health issues in the U.S., yet

individuals often remain in denial about the condition and refuse to seek treatment. You don't have to resign yourself to the same fate, though. Today, you can offset the difficulties associated with hearing loss and maintain a rich, fulfilling life.

This is all thanks to steady advancements in hearing aid technology. Modern hearing aids offer innovative features that make them less conspicuous and more convenient. As a result, you can minimize your condition without feeling self-conscious or defeated.

However, choosing the right hearing aid can still be a challenging experience. It can be difficult to know what you need with so many features on the market. Thankfully, this e-book can help make the process easier. It outlines just a few of the many benefits modern hearing aid technology can offer you. Read on to find out how these unprecedented products can help you regain control over your hearing.





1. Hearing Aids That Integrate with Smartphones

While modern smartphones may have been unfathomable even a decade ago, they're an essential tool for many of today's consumers. These devices give users more control over their lives and allow them to do a variety of tasks from anywhere. Whether you want to take a photo or video, update your social media, check your bank account, or even make a call, your smartphone has you covered.

But did you know that your phone can also help you combat hearing loss? Hearing aids such as Widex's Evoke or Beyond, ReSound's Quattro or Linx, are discreet, reducing discomfort and self-consciousness. However, these aren't the most impressive features. Some of these hearing aids can connect with your smartphone through an app that works with both iOS and Android-based systems. This puts control over your hearing aids at your fingertips. You can change volume settings in each ear to suit your preferences and your environment. These apps are easy to use and allow you to adjust everything from the microphones' directionality to specific sound settings to suit any given environment. Some of these hearing aids even learn from your personal preferences over time, improving their ability to automatically adapt to your specific listening situations.

Best of all, the sound these hearing aids produce keeps pace with innovation. Some can integrate with other devices and even reduce wind noise annoyance, giving you the best chance to hear with less effort no matter where you are. While older technology allowed users to hear better, few could match the adaptability and performance that the newest hearing aids offer.

2. Hearing Aids with Chip Platforms

No two hearing aids are equal. Every model responds to different environments in unique ways. Some work best in quiet situations, while others are more capable of prioritizing speech in complex listening situations, such as at a restaurant or family gathering. Unfortunately, people can experience a variety of environments over the course of the day, so a device that works best in one environment may

prove inferior in another. The trick is to find an adaptable solution that can accommodate many different listening situations.

The newest digital hearing aids feature computer chips that can react appropriately in a wide range of environments without compromising quality. These devices can rapidly cycle between unique settings, known as "soundscapes," to provide the most suitable performance in any

given situation. They automatically shift depending on your given scenario, so you won't need to make unnecessary adjustments.

These hearing aids also come in a variety of styles to suit your specific needs. From completely-in-the-canal to small and discreet over-the-ear style devices, you have many options from which to choose. All are offered in different colors to match your skin tone, hair color, or fashion sense.

3. Hearing Aids with Inter-ear Connectivity

Your hearing has a drastic effect on the way you perceive your environment. Say you're crossing a street and you hear a car honk its horn. One ear will naturally process that sound before the other, and that difference in timing and volume will help you locate the source of that honking. Now imagine you're in the same situation, but with two hearing aids in your ears. If those devices work independently, they may overcompensate for these time and volume differences. This may make it difficult to pinpoint the direction of that sound which can make your environment much more disorienting. It may even make potentially dangerous situations, like crossing a busy street, that much more perilous.

Fortunately, solutions are available. Wireless technology has helped bridge the gap between hearing aids. Devices can use these signals to communicate with one another, allowing them to mimic binaural hearing (hearing with two ears) more closely. This preserves important timing cues which enable us to determine the direction of sound quickly and easily. This is important when crossing a busy street. In addition, if you alter a setting on one hearing aid, the other device will also make the corresponding change automatically. More importantly, critical information for processing speech can be shared between the two instruments. As a result, you can benefit from more intuitive and responsive auditory technology that helps make sure you are hearing your best.

4. Hearing Aids with Adaptive Microphones

Context is everything when it comes to microphones. Generally, hearing aids use directional and/or omnidirectional microphones, which are often used in disparate situations.

For example, directional microphones generally pick up sound from whatever direction they're aiming. This helps you focus on more specific sounds rather than general ones, but it also makes these microphones more susceptible to feedback or sudden disruption from wind or handling. On the other hand, an omnidirectional microphone is less sensitive, picking up sound from all around. While this means there's less chance of disruption, it can also make it difficult for you to focus on one sound over another.

Fortunately, modern hearing aids can switch between microphone modes automatically, which makes them more adaptable to your unique situations. If you want to have a conversation in a crowded restaurant, the adaptive digital directional microphones can automatically adjust, giving you a better opportunity to hear the person you're looking at. The binaural communication (right and left hearing aids sharing information) is also continuously working to prioritize speech to help ensure you are able to hear as well as possible even in less-than-ideal environments.

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5. Hearing Aids with Noise Management Features

Excessive noise can be a problem for hearing aid users, even if their devices feature adaptive microphones. Unwanted sounds overwhelm patients' attention and make it more difficult for them to focus on relevant details. Unfortunately, hearing aid microphones can make transient noises like footsteps or jangling coins sound as loud as a person's voice. This turns ordinary interactions into frustrating trials. Why settle for a hearing aid that makes your surroundings almost unbearable?

Thankfully, many hearing aids feature digital noise management options, which can prioritize incoming speech signals over non-speech signals, as well as ensure

impulse sounds are not uncomfortably loud.

Digital technology allows devices to rapidly analyze incoming signals and prioritize more desirable sounds, such as voices. These are processed and emphasized, while non-speech is given less emphasis, increasing your listening comfort. Devices with impulse noise reduction may be able to reduce sharper sounding non-speech sounds, such as dishes clanking. This feature may reduce the annoyance from sharp, unexpected sounds. It softens these interruptions without compromising speech signals, which provides the best chance to capture important speech details.

WHEN PURCHASING HEARING AIDS, BE SURE TO ASK ABOUT WARRANTY COVERAGE, INSURANCE, LOANER HEARING AIDS, AND EMERGENCY REPAIRS. ALL OF THESE ISSUES CAN MAKE A BIG DIFFERENCE IF YOUR HEARING AID STOPS WORKING OR WHEN MINOR REPAIRS ARE NECESSARY.



6. Hearing Aids with Increased Durability

Hearing aids represent a substantial investment for you, and if you are like most people, you aren't willing or able to buy a replacement set every time something goes wrong. This can create a major dilemma if your primary devices stop working. If you don't get your hearing aids fixed, they may not be able to function at their best, but even repairs can have moderate costs. This is especially unfortunate considering hearing aids can be

highly prone to damage. Besides wear and tear, some devices may succumb to sweat or dust. All these factors and more can degrade a hearing aid's performance and detract from your benefit. However, recent advances have helped make most newer digital hearing aids sturdier and more reliable. Many stand up better to harsh environmental factors, which ensures fewer repairs, better performance, and in some cases, longer life. Water- and

dust-resistant models also reduce the risk of damage so users can go longer without needing repairs. Overall, these products help patients enjoy their surroundings to the fullest long term. In addition, when purchasing hearing aids, be sure to ask about warranty coverage, insurance, loaner hearing aids, and emergency repairs. All of these issues can make a big difference if your hearing aid stops working or when minor repairs are necessary.

7. Smaller, Less Noticeable Hearing Aids

For some people, cosmetics are important when it comes to hearing aids. Some users are already self-conscious about their hearing loss, to the point where many won't seek treatment. To these patients, an easily noticeable hearing aid may call attention to the issue and make them more insecure. Fortunately, designers and manufacturers recognized this problem with

older-style hearing aids. Modern hearing aids usually offer greater comfort and give users more choice over the aesthetic qualities of their devices. Very discreet models are available in a wide range of styles and colors to help camouflage hearing aids. While many patients may think they want a specific style because they believe it may be less noticeable, such as an in-the-ear model, this style

may not work best for the patient's anatomy or type of hearing loss. If appropriate, there are custom-made, deep fitting, digital hearing aids called CICs or IICs. In addition, Lyric is an extended wear, deep-fit, in-the-canal, programmable device for those who need 24-hour hearing. Lyric is replaced by your audiologist every two to three months. A doctoral-level audiologist can review all the styles and options available that best meet your lifestyle and budget.



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8. Hearing Aids with Programmable Processors

A hearing aid is worthless if it doesn't respond to its user's unique needs. Patients often suffer from very specific conditions, so an imprecise solution does them no favors. Older devices offered some adjustability, but their processing and other limitations affected overall benefit and satisfaction. Modern hearing aids feature digital processors that allow for greater control and faster, more accurate sound processing. These digital components regulate how the hearing aid analyzes and processes the incoming signal. As a result, they're a crucial part of any state-of-the-art technology.

When patients invest in hearing aids, their audiologist customizes the hearing aid settings according to their specific hearing loss and needs. Then the audiologist should verify that the hearing aids are working as they should in each ear using Verifit or Real-Ear technology. This ensures that the hearing aid is programmed to the precise prescription for your specific hearing loss to help you hear the best you can. Advanced digital processors are more powerful than their predecessors, which mean users can get better performance and satisfaction. Greater customization also allows for the most precise sound that modern hearing aid technology can offer.



9. Hearing Aids with More Processing Capability

A hearing aid doesn't help if it amplifies muddled, indistinct sounds. If a user can't tell where a sound comes from or what makes it, their experience of daily life will become much more disorienting. Unfortunately, digital, adaptive directional microphones can only do so much. An especially bustling, noisy environment can result in an overloaded signal, which severely impairs the hearing aid's sound quality. This could compromise a patient's device and make it difficult for them to get a true sense of their surroundings. Users with inexpensive or older hearing aids often suffer from this problem. Their devices don't offer enough processing resolution, which results in poorer audio quality. They may also lack multiple

processing channels, so separating sounds becomes much more difficult. As a result, the devices can't reproduce sound in a distinct way, which ultimately leaves the patient in the lurch. However, the world's leading hearing aid manufacturers have addressed this problem. Advanced hearing aid technology incorporates a higher bit rate, faster processing speed and more precise sound analysis per channel to boost signal resolution and improve users' listening experience. Patients who use these advanced technologies often find it easier to distinguish sounds from one another, hear with more ease and comfort, and ultimately remain engaged with the people and situations they prefer.

10. Hearing Aids with Data Logging Functions

Where people hear is often as important as what they hear. Their hearing aids may be able to pick up a ticking clock in a quiet room, but they also need to be able to distinguish between voices in a crowded place. If their devices can't do both, they probably aren't getting the most value from their purchases. Advancements in hearing aid technology have changed the way hearing aids adapt to their surroundings. Instead of treating every environment the same, modern devices sample the incoming sound to make a decision about the user's unique surroundings. These instruments use this information to understand what their users may need in a given context, which allows them to adapt more easily. For example, if a patient

enters a noisy room, his or her hearing aid can adjust its noise management system and volume levels to automatically suit the environment. Users don't have to adjust their devices manually, which gives them a more comfortable, intuitive experience with their hearing aids. More advanced technology also utilizes data logging, which can help your audiologist determine which environments you are in and which changes or adjustments might be beneficial so that your performance and benefit can be maximized. These features also allow your audiologist to better understand which changes you make regularly, and help monitor use times, which is important when you first begin wearing your hearing aids.



Conclusion

Modern hearing aids can enhance your ability to lead a richer, more fulfilling life. However, a device that works wonders for one user may not yield the same results for another. You can't rely on a one-size-fits-all solution, so you must find hearing aids that suit your specific needs.

Consulting a qualified professional is the first step in this process. Doctoral-level audiologists can determine your specific type of hearing loss. They can also discuss hearing aids with you, which will help them recommend a device that serves your needs. Audiologists have the

knowledge necessary to guide you through this process, from fitting to testing and more. There are several critical steps to success. The first is making sure you are purchasing the best technology for your budget, the second is making sure you are working with a highly skilled audiologist to verify the hearing aids are fit appropriately, and the third is getting the critical follow-up care necessary for your best long-term benefit and success. If you're suffering from any form of hearing loss, look no further than these professionals.

ABOUT US



Associated Audiologists, Inc., is the region's leader in audiologic care for hearing, tinnitus, and balance disorders. Established in 1985, the practice is independent and locally owned by Timothy C. Steele, Ph.D., president.

Associated Audiologists has grown to include more doctoral-level audiologists than any practice in the area, with six convenient locations to serve you. Our audiologists have allied health staff privileges at Shawnee Mission Medical Center, Saint Luke's South Hospital, Saint Luke's/Cushing Hospital, and Saint Luke's East Hospital.

The Associated Audiologists team features professionals who use advanced diagnostic and verification technology to diagnose and treat hearing loss. The practice offers digital hearing aid products from the world's most respected manufacturers backed by unparalleled service. We also have experts who specialize in diagnosing and managing tinnitus and sound sensitivity, and dizziness and balance disorders.

Each of our associates is a doctoral-level audiologist. As part of their four-year doctoral training, these audiologists spend a final year completing an externship experience supervised by a licensed audiologist. Our audiologists are members of the Academy of Doctors of Audiology (ADA) and hold certificates of clinical competence in audiology from the American Speech-Language-Hearing Association (ASHA). Many of our team members are also adjunct professors at the University of Kansas Medical Center.



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