

CHANGING WORLD OF HEARING AID TECHNOLOGY

Over the past several weeks we have discussed the proper treatment for hearing loss and tinnitus as part of this article series. Today we will look at the encouraging patient benefits that are being realized in the rapidly changing world of hearing aid technology. While the technological advancements are impressive, it's important to remember that the clinician must thoroughly understand not only the technology behind the devices but also the needs of the patient. This will ensure the technology is being applied and used optimally to drive the best patient results.

Hearing aid technology has grown in leaps and bounds since around 2007. Two primary advances have made this possible: an improved feedback cancellation system and wireless technology. In addition, there have been



a range of other improvements such as noise cancellation or noise reduction systems, frequency lowering technology, miniature or deeply inserted hearing aids that are invisible to the naked eye, and speech protection or speech enhancing technology. Let's take a close look at some of these advances.

Feedback:

Most people have experienced feedback at some point in their lives. In simple terms, feedback is the loud whistle you hear when the microphone and receiver or speaker are too close together. Due to the small size of hearing aids, the microphone and receiver are almost always in close proximity so the chance of feedback has been high. Prior to the new developments in this area, the Audiologist could only offer two less than adequate solutions to address feedback: turn down the volume of the hearing aid, which was counter-productive, or live with it. Now almost all hearing aid manufacturers have some sophisticated algorithm (math) that greatly reduces or eliminates feedback, and this means hearing loss sufferers can turn their hearing aids up louder or wear more open-fit devices that provide increase comfort and naturalness to the

overall sound quality. If the patient has a hearing aid that is constantly whistling they either have the wrong device for their hearing loss, or a poorly fit or non-verified hearing aid. With today's devices, feedback should be nothing more than a "minor annoyance" in the worst case.

Bluetooth™ technology:

Bluetooth™ is the name of wireless technology that allows sound transmission over distance without requiring wires. Some hearing aid manufacturers have been using Bluetooth™ technology for nearly five years, and since then there have been significant improvements over the first generation products. In using a Bluetooth™ device, the patient can link their hearing aids to a device or person they wish to hear. For example the patient can connect to the television, telephone, computer, stereo or speaker in a meeting, church or lecture hall and the signal is brought directly into the patient's ears so they can hear without the annoyances and frustrations of background noise. Patient feedback using this technology has been very positive.

Frequency Lowering Technology:

Frequency Lowering technology moves a sound that is inaudible to the patient due to their degree of hearing loss to a frequency area that is audible. In other words, it shifts sound from area where the patient can't hear to an area they can, thus providing more audible sounds. If properly fit the patient can potentially function better in all listening environments. The University of Western Ontario has also demonstrated that the use of this technology can actually help hearing impaired children develop or improve their speech and language skills.

Audiologist Calvin Staples believes these are all exciting technological developments that can provide most patients significant improvements in hearing if the right technology is selected and properly fitted in light of the patient's requirements. The decision making of the Audiologist or Hearing Instrument Specialist should be based upon patient lifestyle needs and abilities, the nature of the hearing loss, and the technology available. But Staples says this is merely the start of the process; the real benefit for the patient comes once the hearing aid starts to be accepted, at which point the clinician can implement the rest of their treatment plan. As we've explained in previous articles in this series, each and every patient should have their own individual treatment plan to help them not only manage their hearing loss, but improve their quality of life.

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