



# Your journey to better hearing

A guide to living a healthy hearing life

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Hear better. Live better.

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***Hearing is one of the human body's most remarkable senses.***

It integrates seamlessly with our brains to help us connect with the world around us. Made up of a complex system of delicate and synchronous parts, it's easy to take this vital sense for granted.

If any of these components aren't working properly, your ability to hear can decline. On average, one in six Americans experiences hearing loss.<sup>1</sup> If you or someone you know would like help, this Better Hearing Guide can be a useful resource.

In it, you'll find out just how common hearing loss is, how help is more advanced and available than ever before, and the steps you can take to ensure hearing loss doesn't get in the way of a healthy and happy life.

# Start with a goal

Like most journeys, the journey to better hearing usually begins with the desire to accomplish a goal. In this case, the goal is to finally do something about your hearing loss and stop letting it impact your quality of life.

We say “finally” because unlike eyesight, which people address by getting glasses as soon as it fades, hearing loss tends to be ignored or put off for as long as possible.


The reasons for delay in seeking treatment are as varied as the people who experience hearing loss:

- **The onset of hearing loss is usually gradual** — Making it easier to ignore or go unnoticed.
- **It’s not always recognized for what it is** — Instead, it’s other people talking too softly or mumbling.
- **It’s viewed as inconsequential** — “So what if I can’t hear as well? It’s not hurting anyone but me.”
- **It’s relatively easy to work around** — You can just turn the TV up louder or avoid places where it’s more of a problem.
- **There’s a concern about how hearing aids look and what others will think** — “My hearing isn’t bad enough for hearing aids.”

Once people fully understand the dynamics of hearing loss, the determination to take this fulfilling journey can begin. So let’s start there.

**Fact:**

*On average, people wait 4.8 years between first noticing their hearing loss and finally taking action.<sup>2</sup>*



## How hearing loss can impact your life

If you think hearing loss is inconsequential, you should know that studies<sup>3</sup> have linked untreated hearing loss to significant issues such as:

- Diminished psychological and overall health
- Impaired memory and ability to learn new tasks
- Reduced alertness and increased risk to personal safety
- Avoidance or withdrawal from social situations
- Social rejection and loneliness
- Fatigue, tension, stress and depression
- Irritability, negativism and anger
- Reduced job performance and earning power



## Hearing loss affects more than just you

Many people put off treating their hearing loss because they wrongly assume it’s only harming them. However, your hearing loss can directly affect and impact those closest to you, and in turn that can cause:

**Frustration:** The need to constantly repeat themselves

**Misunderstanding:** Your withdrawal from people and activities is interpreted as rudeness or disinterest in others

**Concern:** They worry you’re unable to hear warning sounds like smoke detectors, alarms or sirens

**Confusion:** If you answer incorrectly, don’t respond at all or relay the wrong information when conversing with them

# The connection between health and hearing

Hearing health is directly connected to overall health and well-being. That's been proven, and it means that people who are able to hear can engage with the world around them and live better and healthier lives.

Ever-increasing evidence also shows treatment of hearing loss with hearing aids can improve or limit some serious health issues like cognitive decline and dementia<sup>4</sup>. In fact, a 2017 study revealed that treating hearing loss is the single greatest change a person can make to lower their risk of dementia<sup>5</sup>.

Other research supports that it's a change worth making. Adults with moderate to severe hearing loss are three to five times more likely to develop dementia<sup>6</sup>. And adults with hearing loss can experience a 30 to 40 percent faster rate of cognitive decline than those with normal hearing<sup>7</sup>.

*Hearing aids are made so people with hearing loss won't have to miss a single sound that brings them joy. They are made knowing people who hear better, live better.*



People with low-frequency hearing loss are considered **at risk** for cardiovascular events.<sup>8</sup>



**Older adults**<sup>\*</sup> with impaired hearing may have a **shorter lifespan** than their peers without hearing problems.<sup>10</sup>

\*70 years and older

People with mild hearing loss are **3x more likely**

to have a history of falling.<sup>9</sup>



**Over 360 million** of the world's population have **disabling hearing loss**.<sup>11</sup>

**90-95%** of people with **hearing loss can be treated** with hearing aids.<sup>12</sup>



**Adults**<sup>\*</sup> with **untreated hearing loss**

were more likely to report depression, anxiety and paranoia than peers who wore hearing aids.<sup>13</sup>

\*50 years and older



There is a significant association between **high blood pressure** and **untreated hearing loss**.<sup>14</sup>



# What causes hearing loss?

Aging, ear infections, ear wax, genetics, physical damage, ototoxicity, noise exposure, and some viruses and diseases can all cause hearing loss. Whatever the cause, it doesn't typically happen overnight so it may not be obvious right away.

**It's common. Hearing loss affects:**

- Two-thirds of Americans over 70<sup>15</sup>
- Nearly 750 million adults worldwide<sup>16</sup>
- 500 million people under age 65<sup>16</sup>

## Seven Signs of Hearing Loss:

- Frequently asking others to repeat themselves
- Turning the TV to a volume others find loud
- Having trouble understanding conversations in noisy places
- Difficulty hearing women and children's voices
- Feeling like others are mumbling
- Avoiding social situations that were once enjoyable
- Being told by others that you have hearing loss



# What it's like to have hearing loss

You can't recreate a typical hearing loss simply by plugging your ears. A person with normal hearing can hear quiet, medium and loud sounds that vary from low pitch to high pitch with amazing clarity and definition.

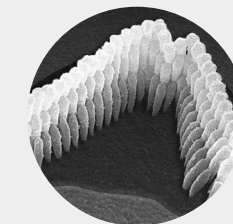
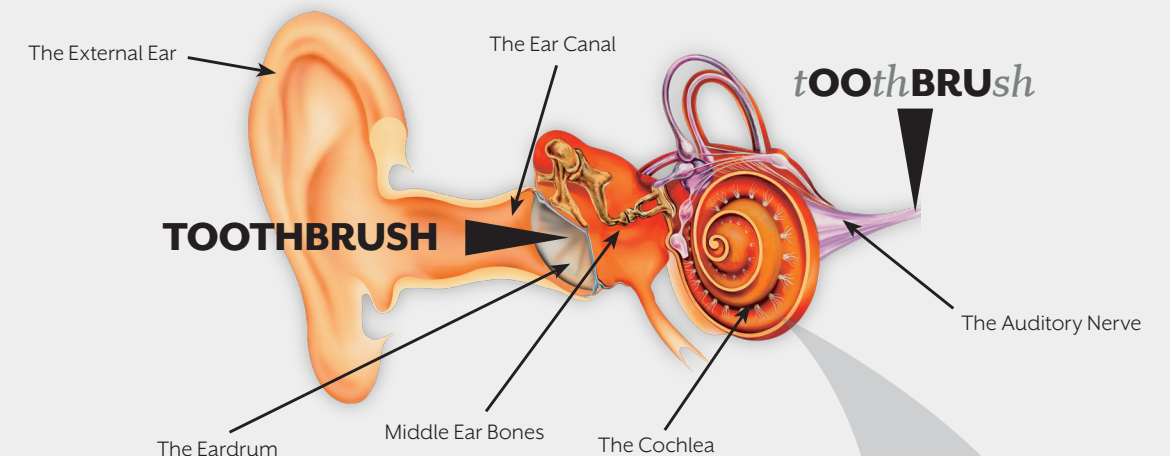
But when you have hearing loss, you often lose the ability to hear higher pitched sounds, like the sound of a mosquito near your ear, women's and children's voices, or consonants like T, S and F. Even though you still may be able to hear strong vowel sounds such as A, E and I, speech becomes harder to comprehend.

THIS IS HOW SPEECH SOUNDS TO PEOPLE WITH HEARING LOSS

Research has shown that exposure to loud sound can damage nerve pathways yet leave sensitivity to very soft sounds intact<sup>17</sup>. The result is that speech and music at the levels we like to listen can be distorted, making understanding very difficult. This is why "I hear, but cannot understand," is a common complaint.

## DID YOU SAY *tOOthBRUsh*?

When your hearing is normal, sound is picked up by your outer ear, transmitted through your middle ear and presented to your inner ear. The inner ear creates a signal that is sent up to your brain where it is interpreted. When your inner ear is damaged, it will not send complete signals to your brain, causing you to be unable to understand the consonants within words. For example, the word "TOOTHBRUSH" may sound like "OO-BRU."



**Healthy hair cells** stand erect, and are able to accurately detect sound waves and send sound impulses to the brain.



**Damaged hair cells** are limp, blown out and will no longer stand erect. They are therefore unable to detect sound waves or send sound impulses to the brain.

# Do you experience ringing in your ears?

Tinnitus (“TIN-a-tus” or “Tin-EYE-tus”) is the medical term for the sensation of hearing sound in your ears or head when no external sound is present. It’s commonly described as “ringing in the ears.” However, for some people it may sound like hissing, buzzing, whistling, roaring and even chirping.

The important thing to know is that tinnitus is not a condition or a disease. Instead, it’s a symptom — typically of something bigger, like an ear infection, high blood pressure or, most commonly, hearing loss.



## Quick tinnitus facts:

- Tinnitus is the number one disability for military veterans<sup>18</sup>
- Tinnitus can occur at any age, and may begin suddenly or progress gradually
- The most common causes of tinnitus are:
  - Noise exposure (e.g., from shooting or machines at work)
  - Aging
  - Head injury
  - Side effects from medication



## Hearing Loss Checklist

Now that you know more about hearing loss, how do you know if that’s what you’re experiencing? This quick yes/no quiz might hold the key.

- | YES                      | NO                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | You can hear, but you can’t understand. Among the first sounds that “disappear” are high-pitched sounds like women’s and children’s voices. Also, you mistake similar high-pitched sounds, such as “fifty” and “sixty.” |
| <input type="checkbox"/> | <input type="checkbox"/> | You find yourself complaining that some people mumble or slur their words.  |
| <input type="checkbox"/> | <input type="checkbox"/> | You have difficulty understanding what’s being said unless you are facing the speaker.  |
| <input type="checkbox"/> | <input type="checkbox"/> | You are continually asking certain people to repeat words or phrases, though they feel they are speaking loud enough.   |
| <input type="checkbox"/> | <input type="checkbox"/> | You prefer the TV or radio louder than others do.   |
| <input type="checkbox"/> | <input type="checkbox"/> | You have difficulty understanding conversation within a group of people.  |
| <input type="checkbox"/> | <input type="checkbox"/> | You avoid group meetings, social occasions, public facilities or family gatherings where listening may be difficult.  |
| <input type="checkbox"/> | <input type="checkbox"/> | You have trouble hearing at the movies, concert halls, houses of worship or other public gatherings — especially where sound sources are at a distance from the listener.   |
| <input type="checkbox"/> | <input type="checkbox"/> | You experience ringing, hissing, buzzing, whistling, roaring or even chirping noises in your ears.  |
|                          |                          | <b>&gt;</b> If you answered “yes” to any of these questions, then it’s time to choose better hearing.   |

## Where to start?

If you think you have hearing loss, the first step is to see a hearing professional to confirm it. The good news is that most hearing loss is easily treatable.

Whether you consult with an audiologist, an ENT doctor or a hearing aid specialist, it's important to see someone who specializes in hearing issues.

Only trained hearing professionals have the experience and equipment needed to perform a thorough audiological evaluation and prescribe the solution that best addresses your unique needs.

### Tip:

*The Better Hearing Institute recommends purchasing hearing aids from hearing healthcare professionals only.*



## 7 reasons to feel good about seeking help

Research by the Better Hearing Institute<sup>19</sup> concluded that hearing loss treatment is shown to improve:

1. Physical health
2. Emotional stability
3. Sense of control over life events
4. Communication in relationships
5. Intimacy and warmth in family relationships
6. Ease in communication
7. Earning power





# What to expect at your first appointment

You take the most difficult step toward improving your hearing when you take the first one — recognizing you need to find out more about your hearing loss and improving your situation. Everything after that is easy, including your initial hearing consultation. Most appointments consist of at least these three steps:

## 1. Hearing analysis

After answering questions to establish your general health and hearing history, you will undergo a thorough hearing examination. First, both ears will be visually examined to see if there are any obstructions in the ear canal that might be affecting your hearing.

Then, you'll be tested with the latest standard-of-care methods and technology to precisely determine the degree and type of hearing loss you have. This quick and painless test consists of listening and reacting to pure tones in a sound treated booth.

Your results will be illustrated in a detailed **audiogram** that your hearing healthcare professional will review with you.

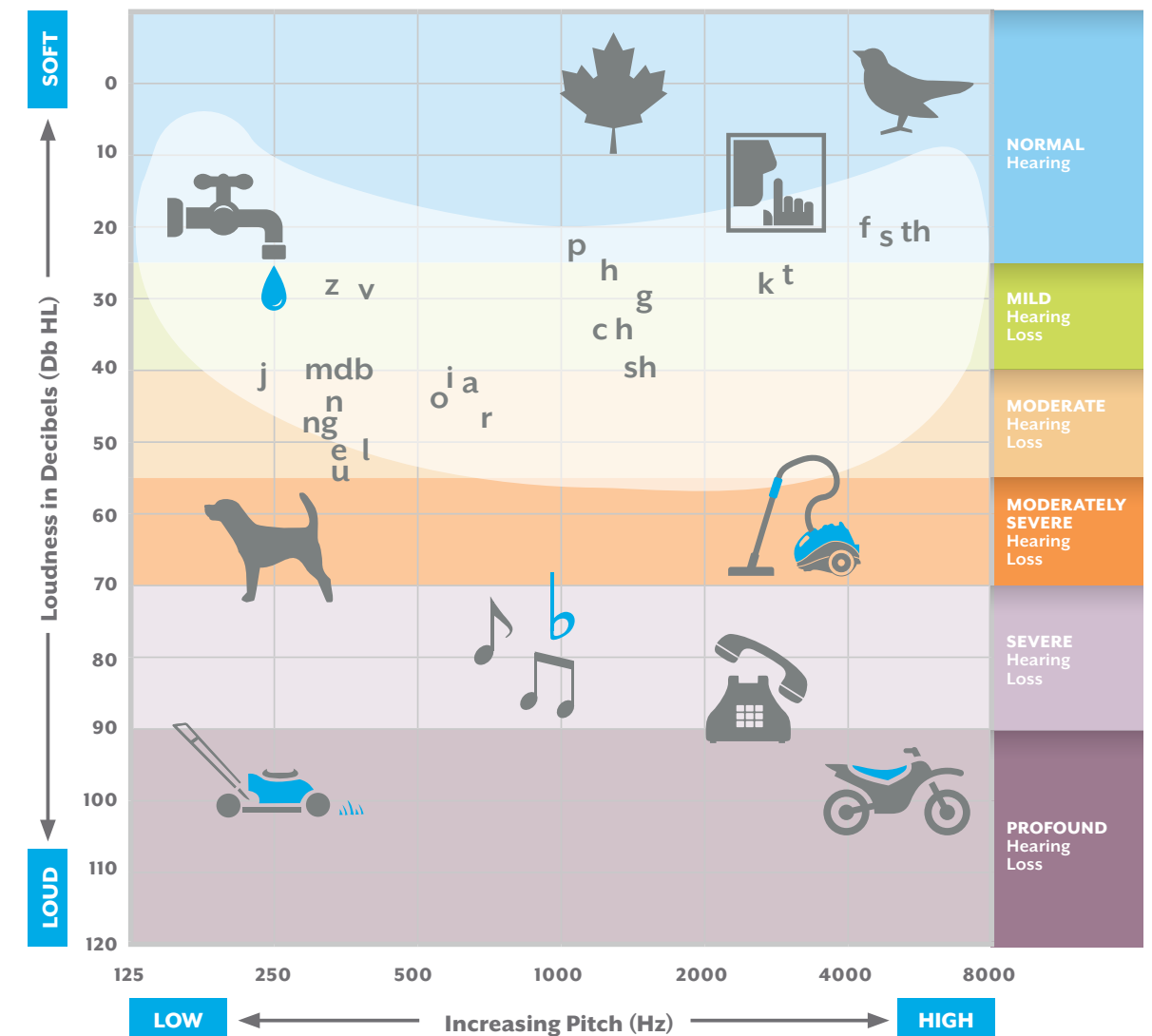
## 2. Lifestyle discussion

Next will be a lifestyle assessment. In this conversation, you will discuss what you may have stopped doing or how your relationships with family and friends have been impacted by hearing loss. This is an important step — as your answers help ensure that any solution prescribed is customized specifically for your needs.

## 3. Solution options

Once the evaluation and assessment are complete, the hearing healthcare professional will explain your solution options. If it's determined that hearing aids can help, you'll get a personalized demonstration of the different instruments that are appropriate for your level of hearing loss as well as your preferences for size, color and features.

Sample Audiogram



# Hearing aids are a smart solution

Today, more than ever, the best solution for many individuals with hearing loss is hearing aids. Like all high-tech devices, hearing aids have improved significantly over the past several years in terms of performance and appearance.

This includes “invisible” solutions that fit deep inside your ear canal and are virtually undetectable when worn, or wireless options that stream audio directly from your TV, radio and phone. Today’s hearing aids sound better, fit more comfortably and perform more reliably than ever before.

## Be informed

If your hearing healthcare professional recommends hearing aids, you’ll want to be ready with questions. So let’s review what you should know about hearing aids.

## How hearing aids help

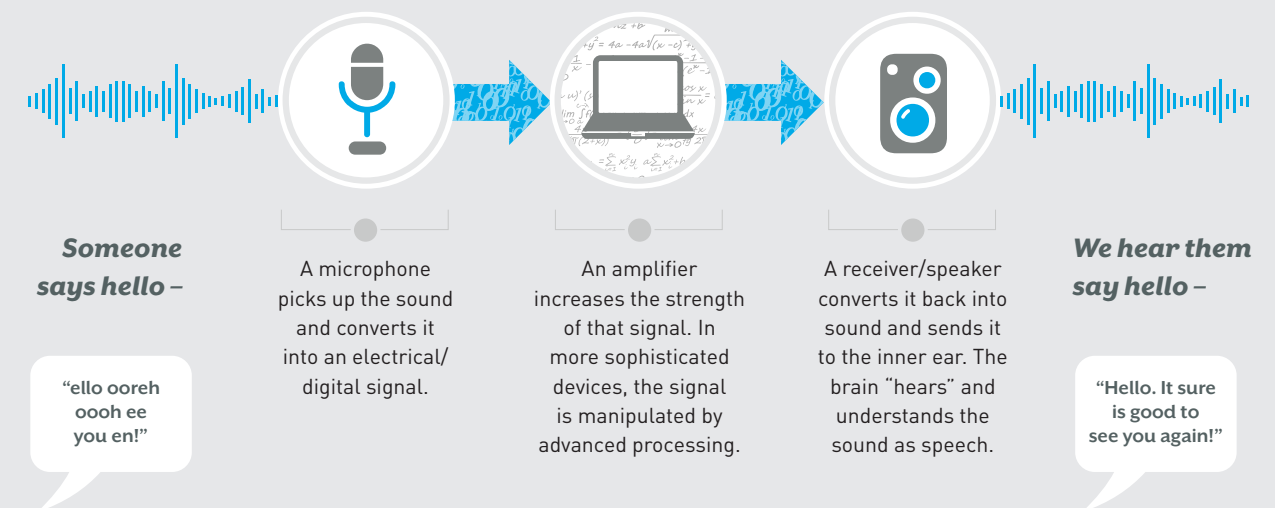
Have you heard negative comments about hearing aids? That’s because the basic premise of hearing aids is to amplify sound. And until the late ‘90s, that’s literally all they did — made everything louder. Today’s hearing aids are designed to do so much more to keep you comfortable and in touch with the world around you.

## How do personal sound amplifiers (PSAPs) differ from hearing aids?

There is a difference between basic amplification products and hearing aids. PSAPs, typically stripped of sound enhancement features, are rudimentary devices similar to old analog hearing aids that only make sounds louder. Although both hearing aids and PSAPs improve the ability to hear sound, hearing aids are designed to improve each individual’s hearing even in difficult situations. With advanced technology features like wireless streaming and body and brain health tracking, the gap between hearing aids and PSAPs becomes even wider.



## How do hearing aids work?



# Advanced features

Today's hearing aids still amplify sounds, but thanks to advances in technology, they're much smarter and more selective in what they amplify. Here are some of the benefits that cutting-edge technologies provide.



## **Hear comfortably in challenging environments**

One of the biggest challenges people with hearing loss have is hearing in busy places like restaurants or social gatherings. It's not that they can't hear, it's that they can't hear clearly. It's all one muddled mass of sound — and the voices of the people they're with don't stand out.

Advanced noise reduction technology provides enhanced clarity of speech and is designed to be effective in even the noisiest environments, comfortable in loud settings and quiet in quiet settings.



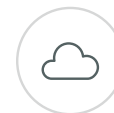
## **Works with your smartphone**

Advanced hearing aids work seamlessly with your favorite digital devices and wireless accessories to help you connect to your world. You can stream phone calls, music and more directly from your smartphone to your hearing aids.



## **Universal connectivity with wireless accessories**

Wireless hearing aids enable more reliable connections between hearing aids and digital devices. With wireless accessories you can directly stream TV, music and more to your hearing aids – with carefree, hands-free connectivity and control. No worn device is required. This direct connection makes you feel more present in your environment, and you can hear at the volume you want without having to listen to loud or harmful sounds.



## **Invisible devices**

New technologies are making it possible to fit all these advanced hearing solutions into smaller and smaller products. Some of today's hearing aids are so tiny they rest completely in your ear canal, so they are virtually undetectable when worn.

***Now, thanks to breakthrough technology, hearing aids provide the most natural hearing experience in the most complex environments.***

# Continuous innovation



At Starkey Hearing Technologies, we continually seek ways to better understand the science of hearing loss and its impact on people’s lives — so we can continually develop better technologies to improve it.

We developed the world’s first hearing aid to provide both superior sound quality and the ability to track body and brain health. As the first-ever hearing aid to feature integrated sensors and artificial intelligence, our latest hearing aids are multi-purpose devices that redefine what a hearing aid can do.

Until now, there has never been a device that tracks physical activity and cognitive health as measured by hearing aid use in social situations.

Most fitness tracking devices use the wrist, but the ear provides far more accurate data — in fact, it’s the ideal spot for reliable tracking.

## *Improving lives with the latest features like:*

- Superior sound quality, more natural hearing and effortless transitions
- Body and brain health tracking to monitor your daily activity
- Streaming of phone calls, music, messages and more, directly from your smartphone to your hearing aids
- Hearing that’s personalized to suit your preferences in different listening environments
- Convenient adjustments to your hearing aids without an office visit via the Thrive Hearing app
- Easy communication with people who speak other languages using the translation tool in the Thrive Hearing app

## *Artificial Intelligence in Hearing Aids*

Artificial Intelligence is the development of computer systems that can perform tasks that normally require human intelligence. Using artificial intelligence in hearing aids helps us optimize your experience with:

- Body and brain health tracking
- Language Translation
- Tap control

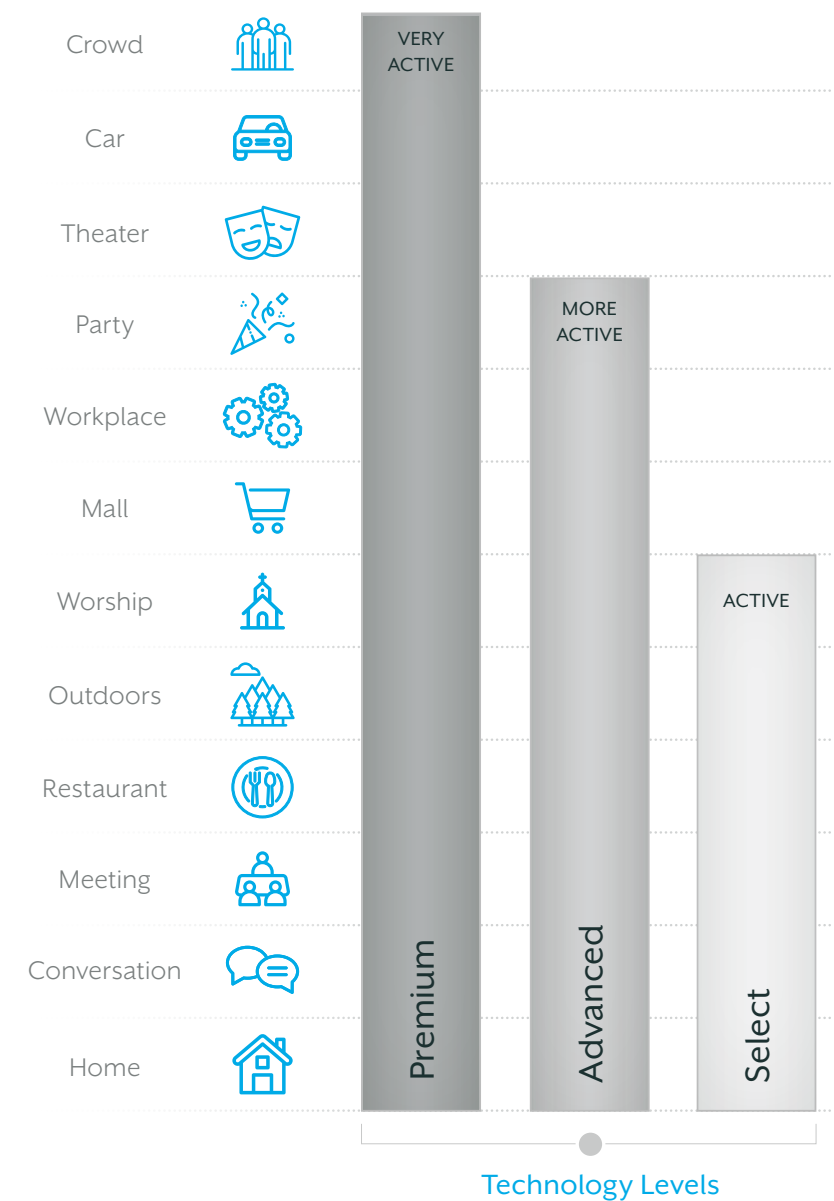


# Hearing aid styles

Hearing aids come in a wide range of styles. Your hearing healthcare professional will recommend one or more types based on factors such as your level of hearing loss, cosmetic preferences, lifestyle needs, and budget. Most Behind-The-Ear and Receiver-In-Canal styles come in a range of colors and metallic finishes to complement your hair or skin tone.



# The right technology for your lifestyle



# The question everyone asks

One of the first things first-time hearing aid buyers want to know is “How much is a pair going to cost?” The answer is, “It depends on what you need.” In other words — people have different hearing needs, not all hearing aids are alike, and not all service packages are the same.

When considered along with other quality-of-life items that you pay for monthly (for instance, cell phones, cable TV or even coffee), the financial investment is very comparable and definitely worth it.

Remember, too, that hearing aids are highly sophisticated medical devices fit by educated and trained professionals, and typically include additional benefits and services like follow-up visits, repairs and counseling.

## *There's a range for a reason*

Like many things you buy — from televisions to cell phones to glasses — there is a wide range of pricing that applies to hearing aids. They're available in a variety of styles, with a range of high-tech features, which means you'll typically pay less for big and basic than you will for hearing aids that are little and loaded.

Features that cancel noise, eliminate feedback, improve high-frequency audibility and enable direct connectivity to phones, TVs and music greatly improve performance and enhance everyday listening, but also increase costs. Insurance coverage varies based upon your plan. Check with your insurance provider to determine your benefits. For details on pricing and financing options, talk to your hearing healthcare professional.

## *The right fit*

Today's best hearing aids are precision instruments, utilizing advanced technology that can and should be customized to fit your specific hearing loss and your unique lifestyle needs. Determining which hearing aids are right for you depends on a variety of important and unique factors, including:

- The nature and severity of your hearing loss
- Your eyesight and dexterity
- The size and shape of your outer and inner ear
- The types of activities you enjoy
- Cosmetic concerns



# Spreading hope from ear to ear

Our Founder and CEO, Bill Austin, has always held the strong belief that the gift of better hearing results in a fuller and richer life.

The gift of hearing opens up new worlds of opportunity. It connects individuals to life and helps them realize they can accomplish more than they ever thought possible. Starkey Hearing Foundation uses hearing as a vehicle to change lives around the world.

## Changing lives through the gift of hearing



100+ countries



More than 1 million hearing health care services provided to people in need worldwide



Countless lives changed



## Sources

- <sup>1</sup> The ASHA Leader. (November 2015). Vol. 20, 8. doi:10.1044/leader.NIB3.20112015.8 Retrieved from: <https://leader.pubs.asha.org/article.aspx?articleid=2468405>
- <sup>2</sup> MarkeTrak 9 Final Report (2015, March). Hearing Industries Association
- <sup>3</sup> Better Hearing Institute (n.d.) Consequences of Hearing Loss. Retrieved from: <http://www.betterhearing.org/hearingpedia/consequences-hearing-loss>
- <sup>4</sup> Bassuk, S. S., Glass, T. A., & Berkman, L. F. (1999, Aug. 3). Social disengagement and incident cognitive decline in community-dwelling elderly persons. *Annals of Internal Medicine*. 131(3):165-73.
- Béland, F., Zunzunegui, M. V., Alvarado, B., Otero, A., & Del Ser T. (2005, Nov.). Trajectories of cognitive decline and social relations. *Journal of Gerontology Series B Psychological and Social Sciences*. 60(6):P320-P330.
- Marioni, R. E., Proust-Lima, C., Amieva, H., Brayne, C., Matthews, F. E., Dartigues, J. F., & Jacqmin-Gadda, H. (2015, Oct. 24). Social activity, cognitive decline and dementia risk: a 20-year prospective cohort study. *BMC Public Health*. 15: 1089.
- Zunzunegui, M. V., Alvarado, B. E., Del Ser, T., & Otero, A. (2003, March). Social networks, social integration, and social engagement determine cognitive decline in community-dwelling Spanish older adults. *Journal of Gerontology Series B Psychological and Social Sciences*. 58(2): S93-S100.
- <sup>5</sup> Lancet Commission (2017)
- <sup>6</sup> Johns Hopkins Medicine. (2011). Hearing Loss And Dementia Linked in Study. Retrieved from: [http://www.hopkinsmedicine.org/news/media/releases/hearing\\_loss\\_and\\_dementia\\_linked\\_in\\_study](http://www.hopkinsmedicine.org/news/media/releases/hearing_loss_and_dementia_linked_in_study)
- <sup>7</sup> Better Hearing Institute. (n.d.). Hearing Loss Treatment. Retrieved from: <http://www.betterhearing.org/hearingpedia/hearing-loss-treatment>
- <sup>8</sup> Friedland, D. R., Cederberg, C., & Tarima, S. (2009). Audiometric pattern as a predictor of cardiovascular status: Development of a model for assessment of risk. *The Laryngoscope*, 119:4733-486. Retrieved from: <http://onlinelibrary.wiley.com/doi/10.1002/lary.20130/abstract>
- <sup>9</sup> Johns Hopkins Medicine. (2012). Hearing Loss Linked to Three-Fold Risk of Falling. Retrieved from: [http://www.hopkinsmedicine.org/news/media/releases/hearing\\_loss\\_linked\\_to\\_three\\_fold\\_risk\\_of\\_falling](http://www.hopkinsmedicine.org/news/media/releases/hearing_loss_linked_to_three_fold_risk_of_falling)
- <sup>10</sup> Norton, A. (2015). Older Adults' Hearing Loss May Be Tied to Earlier Death. *HealthDay News*. Retrieved from: <http://healthusnews.com/health-news/articles/2015/09/24/older-adults-hearing-loss-may-be-tied-to-earlier-death>
- <sup>11</sup> World Health Organization. (2015). Deafness and hearing loss. Retrieved from: <http://www.who.int/mediacentre/factsheets/fs300/en/>
- <sup>12</sup> Better Hearing Institute. (n.d.). Hearing Loss Treatment. Retrieved from: <http://www.betterhearing.org/hearingpedia/hearing-loss-treatment>
- <sup>13</sup> Reinemer, M., & Hood, J. (1999). Untreated Hearing Loss Linked to Depression, Social Isolation in Seniors. *Audiology Today* 11(4). Retrieved from: <http://www.audiology.org/publications-resources/document-library/untreated-hearing-loss-linked-depression-social-isolation>
- <sup>14</sup> Agarwal, S., Mishra, A., Jagade, M., Kasbekar, V. & Nagle, S. K. (2013). Effects of Hypertension on Hearing. *Indian J Otolaryngol Head Neck Surg*. 2013 December; 65(Suppl 3): 614-618. Published online 2013 February 17. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3889339/>
- <sup>15</sup> Johns Hopkins Medicine. (2011). [https://www.hopkinsmedicine.org/news/media/releases/hearing\\_loss\\_rate\\_in\\_older\\_adults\\_climbs\\_to\\_more\\_than\\_60\\_percent\\_in\\_national\\_survey](https://www.hopkinsmedicine.org/news/media/releases/hearing_loss_rate_in_older_adults_climbs_to_more_than_60_percent_in_national_survey)
- <sup>16</sup> World Health Organization <http://www.who.int/pbd/deafness/news/Millionslivewithhearingloss.pdf>
- <sup>17</sup> Kujawa, S. & Liberman, M. (2009). Adding Insult to Injury: Cochlear Nerve Degeneration after "Temporary" Noise-Induced Hearing Loss. *The Journal of Neuroscience*, 29(45), 14077-14085.
- <sup>18</sup> American Tinnitus Association. (n. d.). Demographics. Retrieved from: <https://www.ata.org/understanding-facts/demographics>
- <sup>19</sup> Better Hearing Institute. (2013). Retrieved July 2013: [www.betterhearing.org](http://www.betterhearing.org)

# What continuous innovation sounds like

We don't do technology for technology's sake. From the technicians in our labs to the scientists, audiological researchers and every employee at every level, we continually seek ways to better understand the science of hearing loss and its impact on people's lives — so we can continually develop better technologies to improve it.



Hear better. Live better.





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