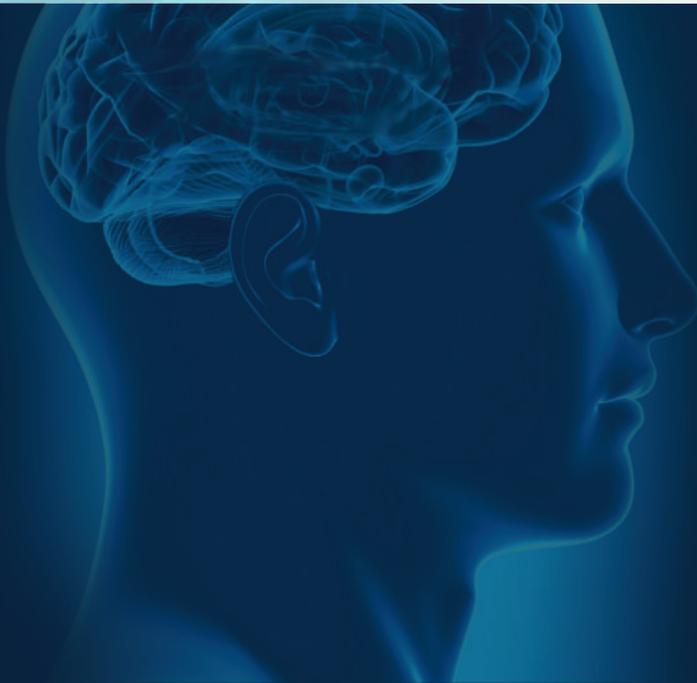


# HEARING

## With Your Brain



**BETTER HEARING WITH LESS EFFORT**

**oticon**  
PEOPLE FIRST



## Helping your brain

# MAKE SENSE OF SOUND



From detecting the simplest sounds to performing the most complex listening activities, your brain is responsible for making sense of everything you hear.

Experience better hearing with less effort, by choosing a hearing solution that supports the whole system— your two ears, and your brain!



## Hearing with Two Ears, One Brain

People have an amazing ability to sort through rapidly changing information and automatically make sense of what is happening.

Hearing functions as a system - two ears and one brain. The ears take in a constant stream of sound information, and the brain identifies and recognizes meaningful patterns.

To interpret sounds correctly, the information our brain receives must be as accurate and as detailed as possible. If it's noisy, when there are many people talking at once, when we are learning new things, or when we're tired, we must pay closer attention to hear and understand. Challenging situations and hearing difficulties interfere with this process.

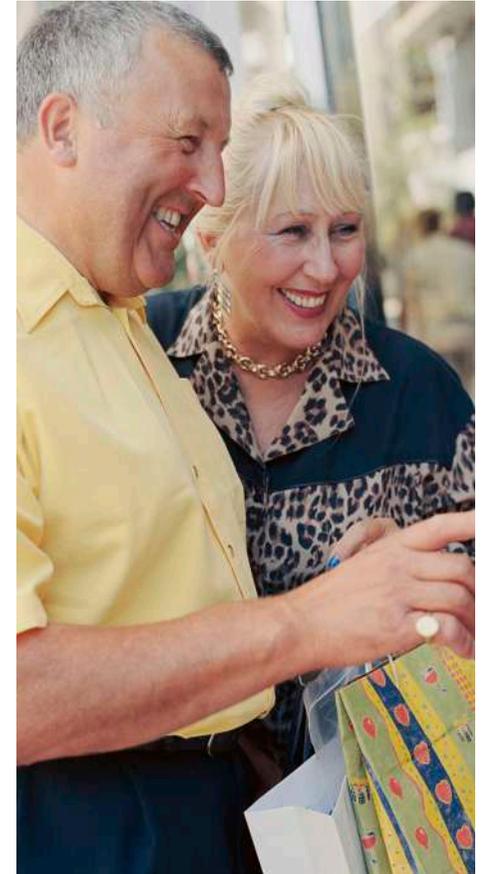
### Did you know?

*Your brain processes and interprets the sounds your ears detect. The fewer details of sound the brain receives, the harder it has to work to make sense of it.*

## Clear Speech

Of all the sounds we hear, speech is probably the most important to us. Its characteristic patterns and rhythms distinguish it from all other types of sound. Speech rises and falls in volume and pitch; it conveys meanings and emotions. Even infants can tell the difference between speech and other sounds and quickly learn to identify familiar voices.

Small differences in sound patterns can make large differences in meaning. The brain relies on these subtle differences to avoid confusion. To understand what is being said, we must know the language and hear each sound pattern clearly.



### Did you know?

*On average, English is spoken at a rate of 6.19 syllables per second. Spanish is much faster at an average rate of 7.82 syllables per second.*

## Listening In All Dimensions

Sounds are all around us—everywhere we go—day and night—whether we're awake or asleep. The world of sound is rich and complex and never stops, yet each sound is here and gone in an instant. How is it possible to identify these sounds and tell where they are coming from? How does this help us understand what people are saying?

## Locating Where Sounds Are Coming From

A person calls from across the room. Depending on the direction that the sound is traveling, and where we are facing, one ear may hear that voice slightly louder and a tiny bit sooner than the other. Even though we are not consciously aware of these

### Did you know?

*Spatial awareness gives you the valuable cues you need to organize what you hear. Your brain distinguishes changes in loudness, depth, origin and direction so sound makes sense to you.*

differences, we use this information to know which way to look.

Our brain registers subtle sound differences to help pinpoint where a sound is coming from. Mentally locating a sound makes it easier to focus on what we are interested in and ignore the rest.

## Listening Effort

Sometimes listening is automatic and effortless. At other times, we need to concentrate and focus. Demanding situations and hearing loss increase the amount of effort it takes to understand and process. An entire day of effortful listening can be exhausting, sapping energy from life's activities. The brain performs best when the least effort is required.



## Natural Sound Quality

You don't have to be an audio expert to know that listening to music through a cheap radio cannot compare to listening at a live concert. It's the difference between a flat, lifeless, even distorted sound compared to the full, dimensional listening experience with all the rich sound details available to enjoy. With speech, as with music, the brain understands and can focus longer when the sound is pleasant, balanced and natural.



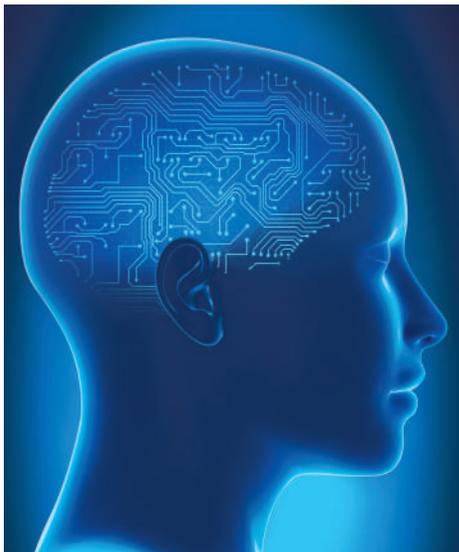
## Personal preference

Your hearing is as unique as your fingerprint. What sounds natural to you is a combination of the way your ears hear, the way your brain processes sound, your previous experiences, and your personal preferences.



### Did you know?

*People collect and store sound patterns in their auditory memory throughout their lives. Sound can evoke instantaneous, automatic responses; just think of all the memories a favorite song from "way back when" can trigger!*



## Technology Supporting the Brain

When people experience hearing difficulties, speech often does not sound as clear to them. They may also have more difficulty telling where sounds are coming from. It also takes more effort to listen and understand.

Modern science is gaining more insight about hearing and brain processing and today's hearing solutions deliver more benefits than ever before to the ears and to the brain. People who wear these modern devices benefit from greater ease of listening, more stamina, and better participation in social situations.

### Did you know?

*Research has shown that when only one hearing aid is worn, the unaided ear tends to lose its ability to hear and understand. Wearing two hearing aids keeps both ears active.*

## Wear two hearing instruments

It takes two ears to give your brain the most complete information. The most advanced hearing solutions use wireless technology where both instruments work together as a system. To take advantage of these benefits, you need two hearing instruments.

This helps your brain create a more dimensional sound picture. Aiding only one ear can even cause your brain to "ignore" the unaided ear over time.

With hearing loss, the extra effort that is required to process sound can have a negative impact on other cognitive activities, including memory and the ability to engage in conversation. The only way to combat this is by keeping both ears active and by choosing hearing technology that supports the way the brain makes sense of sound.

## Focusing on the Conversation

Imagine a busy setting, such as a restaurant. Lively conversation from your table and from others around you, clattering of dishes and cutlery, blaring music and other background noise all contribute to a challenging listening experience. People typically want to focus on the conversation and be less distracted by this unimportant background noise.

Traditional hearing instruments were not as effective in helping people overcome these difficulties and often made the situation worse.

New sophisticated sound processors have been designed to honor your brain's needs for high quality sound without distortion. As a result, conversations can stand out above the noise and the distance relationships of other sounds are more realistic. Listening is also more enjoyable.



### Did you know?

*If you zone out in conversations, you not only miss important details and information, but you also give others the impression that you don't care about and are uninterested in what they are saying. This can create problems and even hurt feelings within social relationships.*

## Improving Spatial Awareness

Subtle but important differences in sound cues on two sides of the head help people hear sounds and locate them. While traditional hearing instrument technology often disturbs these cues, wireless technology works differently by supporting the natural interaction between the ears and brain.

Hearing instruments with binaural processing offer a clearer picture of where you are in relation to people and objects around you.

When you wear two instruments designed to work as a system, both ears can give the brain more accurate information. Locating sound helps keep you more in touch with your surroundings, helps you to understand speech with less effort, and gives you

cues to help you focus when others are trying to get your attention.

### Did you know?

*Spatial awareness gives you the valuable cues you need to organize what you hear. Your brain distinguishes changes in loudness, depth, origin and direction so sound makes sense to you.*



## Helping your brain hear more naturally

Modern technology has made great progress in creating hearing solutions that have a pleasant and natural sound quality and that deliver what your brain needs to understand clearly.

The most advanced solutions can also be tuned to match your unique hearing profile and sound preferences.

Research shows that people who use personalized hearing solutions that support the brain are generally more satisfied with their performance than those who use generic solutions.



## Choosing technology that works smarter

Your hearing care professional will help you choose technology that:

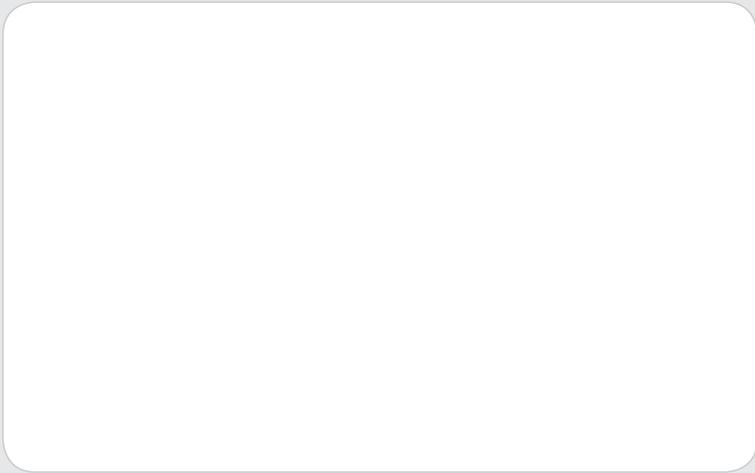
- Preserves the important details in speech
- Works as a system to help you locate sound
- Reduces the effort involved in listening
- Takes your personal listening preferences into account

Your hearing care professional can easily demonstrate the benefits of this technology, either at the clinic or through a home trial.

## People First

People First is our promise:  
to empower people  
to communicate freely,  
interact naturally and  
participate actively

**TO SCHEDULE A HEARING  
APPOINTMENT CONTACT:**



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