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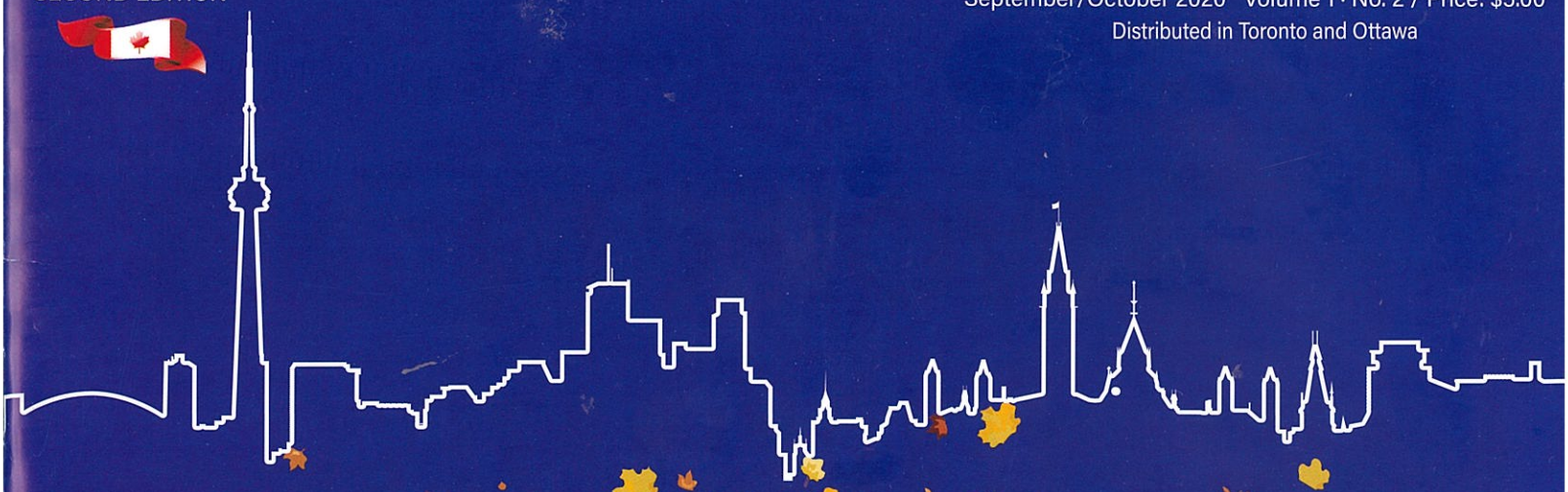

Autumn
brings falling leaves
&
a season to be
Thankful.

The Voice 2020

TheVoice2020

Contributors

I CAN HEAR, SO WHY CAN'T I UNDERSTAND?

Carol Boychuk, M.S., Registered Audiologist

"I can hear people talking, but I can't understand what they are saying, especially when there is a group". This is the most common complaint heard in hearing clinics. In Canada, it is estimated that three million people have hearing loss, with 50% being over the age of 65. However, even after investing in good quality hearing aids, many individuals will still have difficulty hearing in groups and noisy environments. There are a number of reasons why this happens.

Type and Degree of Hearing Loss

The type and degree of hearing loss matters. Conductive hearing loss involves a blockage of sound in the external or middle ear (eardrum and three tiny bones behind it), whereas blockage from the inner ear (cochlea and the auditory nerve) is called sensorineural hearing loss. The snail-shaped cochlea contains sensory cells called hair cells. They look like short hairs or piles on a rug, giving them that name. The bases of these hair cells connect to nerve fibers. They change the mechanical vibrations of sound transmitted from the middle ear into an electro-chemical signal that causes the nerve to fire and carry the sound to the brain. It is the brain that actually does the hearing, not the ears!

With conductive hearing loss, making the sound louder is great because the brain gets a fairly clear signal. However, not so much with sensorineural hearing loss. Hair cells in the cochlear also tune the sound as they convert them to get carried by the nerve. The nerve connections (synapses) also need to be intact. If the hair cells have died and/or synapses been damaged, then there is often a distorted signal being sent to the brain. Unfortunately, 90% of hearing losses are of this type. When you have a mild or moderate hearing loss (30-55 decibels), it's easier for the ear to take amplified sound and trigger the remaining hair cells (called residual hearing) to cover most of the vowels and consonants. However, with more severe hearing losses, the damaged or missing hair cells cause many of the consonants that carry the meaning of speech to be distorted or lost all together. Hearing aids are beneficial, but do not restore a damaged system. There will be gaps in what the brain gets, and these individuals need to rely on speechreading cues to understand. This includes watching lip and facial movements, as well as taking in gestures and "vibes" that the speaker is emanating. In a group situation, it is impossible to speechread everyone at once.

It's More Than Just Ears.

Visual acuity is important. Dimly lit rooms make it harder to speechread. The current need for face masks is very restrictive, causing added communication problems for people with hearing loss. Room acoustics are another factor. High ceilings and uncarpeted floors have reverberant surfaces that add to the din of multiple talkers. One of the most significant factors of hearing with multiple speakers is the fact that the brain slows down in how fast it processes complex sounds as we age. It is this decline in auditory processing that causes many older adults to be less able to tune out background noise and competing messages. Consciousness also plays a role in hearing. If you are thinking of what you need to pick up from the grocery store, you will miss what is being said to you.

What Can Be Done?

There have been significant recent advances in hearing aid technology. These devices have sophisticated computer chips that can get a cleaner signal sent to the brain. Remote microphones, streaming technology and smartphone apps are all beneficial accessories. You can consult with your local audiologist or hearing instrument specialist to learn more.

Manipulating the environment is another way to manage hearing limitations. Moving into an area that is well lit will be helpful. Encourage family and friends to wear clear face masks. Activate the Closed Captioning setting on the TV, and do an internet search for "Quiet Restaurants" in your area.

The benefit of music on the brain has been well documented by scientific research. You do not need to be a professional musician to get these benefits. Even seniors with no previous musical training showed improved auditory processing and memory after just three months of playing an instrument (Aging Mental Health 2007; 11[4]:464). Repetitive practice tunes the auditory system and trains the brain to focus attention. This musical exercise helps the brain with better speech processing as well. So dust off the piano, pick up a ukulele and get at it!

The practice of mindfulness is also beneficial. Just 15-20 minutes of daily quiet meditation calms the body and the mind. This inner calm helps focus attention in the present moment, helping the brain to process complex auditory signals.