

# Sound News

**October 2015**

**Volume 9 number 10**

## **Researchers Identify Potential Presbycusis Contributor**

*gleaned from Lisa Packer - Healthy Hearing*

Could age-related hearing loss someday become a thing of the past? Some researchers at Johns Hopkins indicate that the answer might be yes.

As one of the most common conditions affecting the aging population, age-related hearing loss, also known as presbycusis, affects approximately one in three people in the US between the ages of 65 and 74 and nearly half of those older than 75.

A complex disorder with many possible causes, presbycusis is typically progressive and is characterized by a bilateral loss of hearing, especially that of high frequencies, over a long period of time. Because people are living longer due to advances in health care, the number of people with presbycusis is rapidly increasing; the World Health Organization estimates the number of people living with hearing loss is expected to reach 900 million by the year 2025. Exciting new research that identifies a potential contributor to presbycusis could help prevent it in the future.

By studying the hearing of mice, researchers at Johns Hopkins have found that an increased number of connections between sensory cells and nerve cells may be a factor in presbycusis. The thought is that if these new connections could be prevented from forming, presbycusis could be prevented as well.

First understand what happens to the ear in response to sound: It all starts with two kinds of cells: the sensory cells and the nerve cells.

The sensory cells are essentially

filament-like structures that act like antennae as they pick up sound waves. When sound happens, these sensory cells inside the inner ear take the sound waves and convert them to electrical signals.

Deep within the inner ear, there are two kinds of sensory cells, also called hair cells: an inner set and an outer set. The inner set of sensory cells lies closer to the brain, but it is the outer set that has always been thought to be most relevant to presbycusis. The outer set not only converts sound waves, but also serves as an amplifier that allows us to hear very quiet sounds. Due to causes such as certain medications, disease or just plain old genetics, as we age we also lose many of those outer hair cells; losing the outer hair cells means our ears have reduced capabilities of sound amplification.

Now we come to the nerve cells, and their connections with the sensory cells. Each nerve cell is assigned only one role: either incoming or outgoing. The job of the outgoing nerve cell connections is to bring signals from the brain to the cochlea, while the job of the incoming nerve cell connections is to send signals from the ear to the brain in order to convert the signals into recognizable sound. Most importantly, the incoming nerve cell connections serve to lower the amplification in response to noise.

Based on previous research which had already suggested an age-related decrease in the outgoing

connections and an increase in the incoming connections, researchers decided to test the efficiency of the connections. The results were surprising.

When researchers looked at the electrical signals from within the inner hair cells of mice, they found that the incoming nerve cell connections were more active in the mice that had hearing loss. The higher activity of the nerve cell connections combined with the increase in numbers resulted in a significant dampening of the amplification in response to noise.

Whether the increase in incoming connections is just to fill the space vacated by the reduced outgoing connections isn't yet known. What is known is that the increase in inbound connections serves to dampen sound significantly, and that is a problem when it comes to hearing.

It's long been thought that the death of sensory hair cells in the inner ear is almost entirely to blame for age-related hearing loss. While some causes of presbycusis, such as excessive exposure to noise, can be avoided in order to reduce the risk of age-related hearing loss, other causes such as genetics cannot. This new information suggests that if doctors could prevent these new connections from forming, many cases of hearing loss could be avoided. Could the prevention of these new connections be like a fountain of youth for your ears? Quite possibly. "If confirmed physicians may someday treat or prevent age-related hearing loss.

## Leone's Line



I wish you enough sun to keep your attitude bright no matter how gray the day may appear. I wish you enough rain to appreciate the sun even more.

I wish you enough happiness to keep your spirit alive and ever lasting.

I wish you enough pain so that even the smallest of joys in life may appear bigger.

I wish you enough gain to satisfy your wanting. I wish you enough loss to appreciate all that you possess. I wish you enough hellos to get you through the final good-bye.

*Leone*

## infections in early childhood can cause hearing loss. *Gleaned from Hear it*

Hearing loss in elderly people is often perceived as a natural effect of getting older, but a study from Newcastle University shows that infections in early childhood can cause hearing loss.

The study shows that people who have suffered from childhood infections are more likely to develop hearing loss in their 60s.

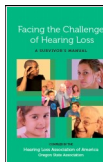
Infections like tonsillitis, ear infection like otitis media and multiple episodes of bronchitis proved to have an impact on hearing after the age of 60.

### Volunteers needed:

We need members to be **at the Welcoming Table** at the beginning of our general meetings. Duties will be written out for easy reference and are basically to arrive at 6:40 and greet people as they come in. Hand out raffle tickets and ask new people to sign in to receive a free Welcome pack about our chapter. This is an easy, but *essential* role to help our chapter. For more information contact:

Lesley Bergquist at [lesleyb@earthlink.com](mailto:lesleyb@earthlink.com)

*Welcome*



## New Survivor's Manuals

**FREE to Anyone**

**Donations appreciated.**

**Cost to mail copies is \$4 each or 20 for \$35  
PO Box 22501  
Eugene, OR 97402**

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Eugene OR 97402**

Members: if you have changed your e-mail address please notify Karin Smith of the change [karinsm@efn.org](mailto:karinsm@efn.org)

Hearing Loss Assoc.-Lane County, Oregon Information calls are taken by Linda Diaz 790-1290

**HLA A** is published monthly for members of Hearing Loss Association of Lane County.  
Annual chapter fee of \$10.00 can be mailed to HLA-LCO Inc. PO Box 22501, Eugene, OR 97402

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### Article Deadline: Second Thursday each month

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**National website:** [www.hearingloss.org](http://www.hearingloss.org)  
**Oregon website:** [www.hearinglossOR.org](http://www.hearinglossOR.org)  
**Chapter website:** [www.hearinglosslane.org](http://www.hearinglosslane.org)



## Out and About

Karen Swezey and Leone Miller are still distributing Survivor's Manuals..

We boxed 50 copies to 30 Vocational Rehab Centers.

Our condolences to our president Shirley Perry's family on the loss of her son. It is a difficult time for all of them.

### New Invention Could Prevent Hearing Loss For Firefighters *Hearing Planet*

Firefighters continuously risk suffering the effects of permanent hearing loss. The constant wail of sirens, as well as the raucous noise created by chainsaws, metal cutting saws, and other advanced equipment, undoubtedly causes firefighters' hearing abilities to decrease.

Hearing loss is a top priority for fire chiefs. Firefighters' hearing is monitored during routine checks, but despite the current preventive measures put into practice, many firefighters end up needing a hearing aid upon retirement.

Currently, firefighters use headsets to protect their hearing while on board a truck. The headsets are designed to minimize the damage caused by the roaring engines and sirens, but allow users to hear one another as well as their dispatch radio. Once at an emergency site, ordinary foam ear plugs are used, but these cheap, low-tech tools are hardly an ideal solution.

It takes time to insert a foam ear plug, and when on a job site, firefighters often don't have the time needed to ensure that their hearing protection has been correctly put into place. On top of that, between giving and taking instructions, coordinating rescue operations, and hustling about to get the job done, firefighters may need to remove their ear plugs and may not get the chance to properly replace them.

Advances are being made thanks to an Albuquerque audiologist named Dr. Kathleen Romero who has created an innovative ear plug designed to suit the unique needs firefighters face on a daily basis. Her design features form-fitted foam inserts that are made using a customized mold. They're easy to put in and take out, and they're fitted with a cord, which allows users to conveniently clip their ear plugs onto their uniform collar. This way, the plugs are always ready when needed.

Dr. Romero's new ear plugs are adjustable for different levels of noise, so firefighters can choose the right level of protection needed for the job at hand. Unfortunately, Dr. Romero's new protectors aren't cheap. A single pair costs \$180, but for fire departments with a contract, the price is just \$125 a pair, making the use of this product a valuable investment in the fight against hearing loss. So far, the Sandoval County and Town of Bernalillo departments are the only ones using Dr. Romero's design, but due to the potential to better protect their firefighters, other departments are undoubtedly looking into it.

# Keeping Your Batteries Charged



## Information You Can Use

Research from the University of Leicester in the UK has found that noise induced hearing loss is primarily caused by a thinning of the myelin coat that protects the auditory nerve cells in the inner ear. This finding takes researchers one step closer to developing preventive strategies and maybe even cures.

It is well known in research that noise induced hearing loss slows down the auditory signals, which makes it difficult to understand speech. Until recently however, the mechanisms behind this have been unclear.

In the United Kingdom, 53% have never had a hearing test carried out. In France, 51% have never had their hearing tested while in Switzerland, 44% do not know if there is a problem with their hearing or not. (*European Hearing Instrument Manufacturers Association*).

For every fifth participant in the study, the last hearing test they had was carried out more than five years ago. Around 10% have had a hearing test carried out in the last 12 months.

According to the Center for Disease Control and Prevention (CDC) in the U.S., about 30 % of all individuals affected with measles frequently suffer from ear infections and/or pneumonia, which is an infection of the lungs that in the most serious cases can cause death in young children.

CDC outlines that ear infections occur in about 1 in 10 measles cases and the consequences can for some be permanent hearing loss. Hearing problems occur because the nerves of the brain are damaged as a result of encephalitis – a condition in which swelling of the brain occurs.

## How to Talk to Someone With Hearing Loss

People with hearing loss often feel isolated and out of the loop. If we can't easily listen to and share in conversation we can feel left out or ignored. It's difficult to separate conversation from background noise or to listen to several people talking at once. You can make all the difference! Follow these easy tips and your friend, colleague or loved one with hearing loss will more easily understand what you're saying and be able to participate. They'll appreciate the effort and you'll appreciate the time you share together.

### AVOID

**Shouting** Seems rude and offensive

**Giving up quickly** Rephrase/try again

**Background noise** It's hard to separate noise and speech

**Multiple Conversations at once** speak one person at a time

**Lack of Visual Clues**

Using your body, hands, expressions can help

A major concern for people with very significant hearing loss is understanding conversations in groups. Most people frequently seem unaware that people with hearing loss who need to lipread cannot easily join other people's conversations and that they need visual clues to know who is talking and when in order to be able to speechread them right away. Even when they're told this, it's still hard for them to change life-long communication habits. The result is that even if everyone in the group knows a person has a severe hearing loss, frequently few of them seem to try to accommodate the person's hearing loss, perhaps because they have no idea how to do so.



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Membership in HLAA is \$20 student, \$35 individuals, \$45 for couple/family, \$60 professional. It includes the award-winning bi-monthly magazine, *Hearing Loss*. Write HLAA, 7910 Woodmont Ave., Ste. 1200, Bethesda, MD 20814; 301-657-2248 (Voice); 301-657-224 (TTY); 301-913-9413 (Fax) or [www.hearingloss.org](http://www.hearingloss.org). Get the latest e-news: <http://www.hearingloss.org/membership/Sen.asp>.

All ads are subject to review. Preference will be given to advertisers offering goods and services to hard-of-hearing and deaf people. Mention of goods or services in articles or advertisements does not indicate HLA endorsement, nor does exclusion suggest disapproval.





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*Above: Brad Smith Au D*

*Katherine Swem Au D*

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## Feel Good About Your Hearing

For comprehensive adult and pediatric hearing evaluations, you can depend on our advanced technology and caring professionals. Call to schedule a consultation to learn more about the latest digital hearing aid products.



541-334-3370

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Laura Hurn, Au.D., CCC-A  
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### Can't Hear With Background Noise?

Or do you have difficulty understanding words on TV or having a telephone conversation? 30 million Americans have this type of hearing problem. Hearing aids help very little when there is noise present and make it worse in loud noise. They work best in low noise, "living room" situations. Background noise (especially speech) and long distances to the sound source, make you unable to distinguish words.

I know because I struggled with this problem for over 10 years as my hearing got worse until I discovered the existence of Assistive Listening Devices (ALDs). These devices bring the sound source closer while at the same time increasing the high frequencies that make words crisp. This improves your understanding dramatically in noisy backgrounds. Personal amplifiers, like the **Audable Personal Listener (\$79.99 – w/ headphones & earphones)**, are used in restaurants, automobiles, and small groups to enable you to UNDERSTAND what is being said. **45-day price refund.**

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**Do you know someone who might like to know about the help available with HLA? Send us their name and address and we'll send them a Welcome Packet.**

This space could be yours for special personal announcements

(Congratulations/Birthdays/ Memorials, etc.)

Member: \$20 non Member \$30

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800-676-3777 (TTY / Voice)

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App features include:

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- Call history
- Font size/color modifications
- Built-in voicemail

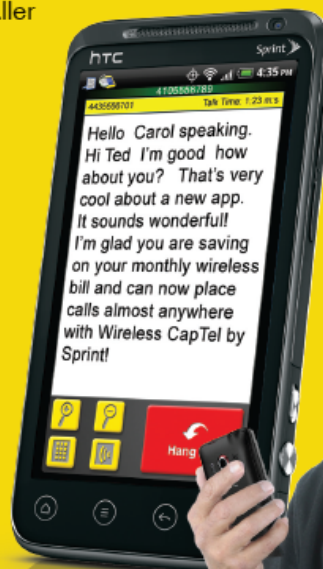


Scan to download app or search Wireless CapTel by Sprint in the Android Marketplace.

\* App requires an Android-powered device with OS 2.2 or higher.

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## Hearing Loss Assoc. of Lane County Chapter Fee and National Membership Form

Please fill out this form /survey and turn in at the general meeting or mail to HLA - Lane Co., PO Box 22501, Eugene, OR 97402.

I have enclosed: Chapter fees \_\_\_\_\_ \$10.00 Chapter Donation of \$ \_\_\_\_\_  
National dues \_\_\_\_\_ \$35.00 (regular) \$70 \_\_\_\_\_ (professional)\*

Name: \_\_\_\_\_ E-mail: \_\_\_\_\_

Preferred phone: \_\_\_\_\_

Address: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Occupation (former occupation if retired) : \_\_\_\_\_

Why are you joining us?

What most interests/puzzles you about hearing or hearing devices?

Are you interested in volunteering? What would you like to do?

How did you learn about us \_\_\_\_\_?

Would you like to be on our email news list: \_\_\_\_\_ Yes \_\_\_\_\_ No

\*Donations to either the national organization or our local chapter are always welcome and are tax deductible. (We do not share our information lists with anyone else. Receipts will gladly be provided.)

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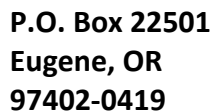
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If the month & year on your mailing label have already passed, it's time to renew your membership! Please use the form on page 6 to pay your dues



2580 Hilyard St., Eugene, OR

**HLA Meeting: Thursday, October 8 7 pm**

# "Hearing Tests Are Not Pass Or Fail ..."

**Laura Hurn**

Laura is an Audiologist at Oregon Medical Group, who will speak about how to get the most out of audiology testing. She will explain how hearing tests are done, how tests determine the amount of our hearing loss, and why it's important to be as straightforward during the testing process as possible in order to derive the maximum benefit of being tested.

Laura completed a B.S. in neuroscience at the University of Rochester, while completing a minor in American Sign Language. She has completed her doctoral degree in audiology. Included in her duties at Oregon Medical Group, Laura performs pediatric and adult hearing tests, and hearing aid services for adults. Her goal as an audiologist is to improve patient quality of life through better hearing and communication.

**A question and answer period will follow.**

Accessible for all degrees of hearing loss - Amplification, Loop Assistive listening system and Real Time Captioning provided. For more information, contact [lesleyb@earthlink.net](mailto:lesleyb@earthlink.net)

Website: [hearinglosslane.org](http://hearinglosslane.org)

# Calendar

**Board Meeting Sept. 29**  
3:30 to 5 pm Members Welcome  
Hilyard Community Ctr.  
2580 Hilyard St Eugene

Membership meetings are the 2nd Thursday of the month. They are accessible for all degrees of hearing loss by amplification—loop assistive listening systems.

**Real time captioning by CC Reporting  
(Debby, Chris, ad Jan)**