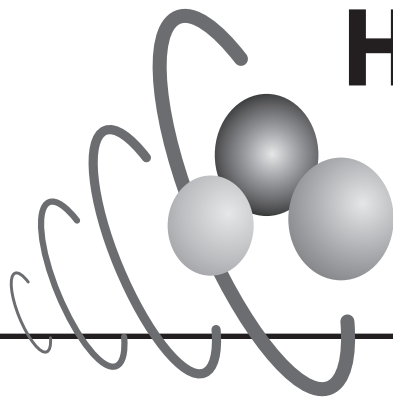


North Shore Chapter of Long Island

December 2011



Hearing Loss Association of America

Meeting Location

Long Island Jewish Hearing & Speech Center is located on the grounds of the Long Island Jewish Medical Center. Enter the grounds from LAKEVILLE ROAD and it is the first building on your left. Free parking is available behind the hearing and speech building: first entrance to parking lot after building. DO NOT go into the main parking building. Go to the Conference room on the Lower Level 270-05 76th Avenue New Hyde Park, NY 11040.

If you are in doubt as to whether there is a meeting, or if you'd like further information, please call Sal: 718-479-1098.

FYI

Assistive Listening Devices (ALD) are provided at our meetings. Headphones are available in the back. This room is Looped, so those who have hearing aids/cochlear implants can put on their T-coil switch.

Johns Hopkins Researchers Find That One in Five Americans Has Hearing Loss

By www.advancewebsite.com

Nearly a fifth of all Americans 12 years or older have hearing loss so severe that it may make communication difficult, according to a new study led by Johns Hopkins researchers and published in the Nov. 14 Archives of Internal Medicine. The findings, thought to be the first nationally representative estimate of hearing loss, suggest that many more people than previously thought are affected by this condition.

Study leader Frank Lin, MD, PhD, an assistant professor with dual appointments in both the Department of Otolaryngology-Head & Neck Surgery at the Johns Hopkins School of Medicine and the Department of Epidemiology at the university's Bloomberg School of Public Health, explains that several previous estimates of hearing loss focused on various cities or populations, such as children or elderly patients. However, no estimate successfully encompassed the entire United States.

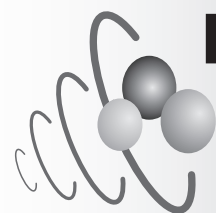
"I couldn't find a simple number of how common hearing loss is in the U.S.," Lin says, "so we decided to develop our own."

Lin and his colleagues used data from the National Health and Nutritional Examination Surveys (NHANES), a research program that has periodically gathered health data from thousands of Americans since 1971. The researchers analyzed data from all participants age 12 and over whose hearing was tested during NHANES examinations from 2001 to 2008. Unlike previous estimates, NHANES includes men and women of all races and ages, from cities scattered across the country, so it's thought to statistically mimic the population of the United States.

Continued on Page 2

Discounted Ticket Offers

If you'd like to receive discount offers for drastically reduced tickets to performances at Carnegie Hall and Lincoln Center, please email mwaymire@midamerica-music.com, and be ask to be put on the "\$7 list." And be sure to "ask for Orchestra seats due to hearing loss."



Hearing Loss Association of America

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HLAA of North Shore Long Island does not necessarily endorse the opinions of our speakers, goods & services.

Johns Hopkins Researchers Find That One in Five Americans Has Hearing Loss
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Using the World Health Organization's definition for hearing loss (not being able to hear sounds of 25 decibels or less in the speech frequencies), the researchers found that overall, about 30 million Americans, or 12.7 percent of the population, had hearing loss in both ears. That number jumps to about 48 million, or 20.3 percent, for people who have hearing loss in at least one ear. These numbers far surpass previous estimates of 21 million to 29 million.

Hearing loss prevalence nearly doubled with every age decade, with women and blacks being significantly less likely to have hearing loss at any age. Lin and his colleagues aren't sure why these groups appear to be protected. However, he notes that the female hormone estrogen, as well as the melanin pigment in darker skin, could have a protective effect on the inner ear-topics they plan to research in future studies.

In the meantime, Lin says, the new numbers greatly inform the work he and other researchers are doing on hearing loss and its consequences, which, according to previous studies, include cognitive decline, dementia, and poor physical functioning.

"This gives us the real scope of the problem for the first time and shows us how big of a problem hearing loss really is," Lin says.

Other researchers who participated in this study include John Niparko, MD, of the Johns Hopkins University School of Medicine, and Luigi Ferrucci, MD, PhD, of the National Institute on Aging.

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Tinnitus Discovery Could Lead To New Ways To Stop The Ringing

By Robert Sanders, Media Relations | September 12, 2011

Neuroscientists at the University of California, Berkeley, are offering hope to the 10 percent of the population who suffer from tinnitus – a constant, often high-pitched ringing or buzzing in the ears that can be annoying and even maddening, and has no cure.

Their new findings, published online last week in the journal *Proceedings of the National Academy of Sciences*, suggest several new approaches to treatment, including retraining the brain, and new avenues for developing drugs to suppress the ringing.

"This work is the most clearheaded documentation to this point of what's actually happening in the brain's cortex in ways that account for the ongoing genesis of sound," said Michael Merzenich, professor emeritus of otolaryngology at UC San Francisco and inventor of the cochlear implant, who was not involved with the research. "As soon as I read the paper, I said, 'Of course!' It was immediately obvious that this is almost certainly the true way to think about it."

Merzenich is also chief scientific officer at Posit Science, which develops software to retrain the brain, primarily to improve learning and memory but more recently to address problems like schizophrenia, Alzheimer's Disease and tinnitus.

"Two million Americans are debilitated by tinnitus; they can't work, they can't sleep. It's life destroying and a substantial cause of suicide," he said. "These experiments have led us to rethink how we attack the tinnitus by our training strategies."

Loud noises kill hair cells

According to coauthor Shaowen Bao, adjunct assistant professor in the Helen Wills Neuroscience Institute at UC Berkeley, tinnitus – pronounced TIN-it-tus or tin-NIGHT-us – is most commonly caused by hearing loss. Sustained loud noises, as from machinery or music, as well as some drugs can damage the hair cells in the inner ear that detect sounds. Because each hair cell is tuned to a different frequency, damaged or lost cells leave a gap in hearing, typically a specific frequency and anything higher in pitch.

Continued on Page 5

Products Include Eyewear to be Used by Deaf, Hard of Hearing

By Karen Idelson, news@variety.com

Sony's Entertainment Access Technology, the products include eyewear that can be used by deaf and hard of hearing consumers to view closed captioning data in up to six different languages.

Sony is introing products to make it easier for hearing and visually impaired moviegoers to enjoy films at ShowEast2011.

Dubbed Entertainment Access Technology, the products include eyewear that can be used by deaf and hard of hearing consumers to view closed captioning data in up to six different languages. The glasses synch up with Sony's digital cinema projection systems using a wireless signal. Then extremely small projectors within the glasses display the closed captioning data for the person wearing the glasses, which are also adaptable for 3D.

The lightweight glasses, which have been tested with consumers in Seattle, also have an adjustable text height feature and have a receiver that makes it possible to use headphones for the hearing impaired or audio descriptive tracks for the visually impaired.

Sony plans to make these glasses available to exhibitors for purchase. "The idea was to use some developments and innovation to find a way for people with hearing or vision challenges to enjoy movies more than was previously possible," said Gary Johns, svp of Sony Electronics' digital cinema solutions group.

Ask the Audiologist

Jennifer Weitz, Au.D, CCC-A,
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Questions: What is the life of a hearing aid? Do I have to replace mine if it still works?



Answer: The average life of a hearing aid is 4-5 years.

Much like an old car, as a hearing aid ages it may break down more often and require more repairs. In addition, they can become “battery guzzlers.”

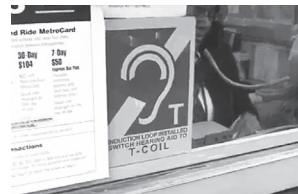
Often hearing aids get replaced while they are still in good working order because technology is constantly evolving. Newer aids can provide better hearing in noise, less whistling or better communication on the telephone.

With proper care and maintenance, your aids can last up to 10 years and can always be used as a back-up if replaced sooner!

New MTA Project Makes Subway Navigation Easier For Hard Of Hearing

By Kafi Drexel

New York City is very noisy, making it difficult for those with hearing problems to get around. But there is a high-tech solution being tested in the subway system that could be a major game changer for those with hearing aids. NY1's Health reporter Kafi Drexel filed the following report.



Directions from a station agent used to be nearly impossible to understand for 17-year-old Arielle Schacter, who has severe hearing loss. “It would be like I knew sound was happening but it’s like a silent movie where everything’s going on and you don’t understand it, except when someone gives you a little bit of a hint,” Arielle says.

That silent world is now becoming audible, with the introduction of a device called the “hearing loop” into more public spaces throughout the city. In large part due to the work of Arielle’s mother, Janice Shachter Lintz, who runs the advocacy group Hearing Access Program, it is in more than 400 subway booths around the city.

“We know there are 36 million people with some form of hearing loss and we know that number is growing,” says Lintz. The technology, known as an induction loop, is already common in some European countries. The loops, placed around the perimeter of a room or window, sends out electromagnetic signals that can jump to a receiver called a telecoil or “t-coil,” which is already in most hearing aids or cochlear implants.

When the t-coil is switched on, it picks up only what comes through a microphone or loudspeaker and cancels out the background noise. The \$13.5 million subway hearing loop project is the largest in the country.

“Induction loops were a federal stimulus project. It was a project we were considering and had completely designed, so the project came directly from the federal government,” says Marc Bienstock of MTA NYC Transit.

Advocates say the technology is so advanced that the sound can actually come across more clearly than what New Yorkers without any hearing loss might normally hear.

“It’s gaining attention now but it’s not even new. I seem to recall back 20, 25 years our hearing aids had t-coils on them. You used them for the telephone. Nobody talked about it,” says Arlene Romoff of the Hearing Loss Association. “To put this infrastructure in looping systems, where it can actually do some good aside from just hearing on a phone or sitting in a looped room, to finally literally get light shown on this, it’s enormous.”

Tinnitus Discovery Could Lead To New Ways To Stop The Ringing
Continued from Page 3



Experiments in the past few years have shown that the ringing doesn’t originate in the inner ear, though, but rather in regions of the brain – including the auditory cortex – that receives input from the ear.

Bao’s experiments in rats with induced hearing loss explain why the neurons in the auditory cortex generate these phantom perceptions. They showed that neurons that have lost sensory input from the ear become more excitable and fire spontaneously, primarily because these nerves have “homeostatic” mechanisms to keep their overall firing rate constant no matter what.

“With the loss of hearing, you have phantom sounds,” said Bao, who himself has tinnitus. In this respect, tinnitus resembles phantom limb pain experienced by many amputees.

One treatment strategy, then, is to retrain patients so that these brain cells get new input, which should reduce spontaneous firing. This can be done by enhancing the response to frequencies near the lost frequencies. Experiments over the past 30 years, including important research by Merzenich, have shown that the brain is plastic enough to reorganize in this way when it loses sensory input. When a finger is amputated, for example, the region of the brain receiving input from that finger may start handling input from neighboring fingers.

Bao noted that retraining the ear has been tried before, but with limited success. Most such attempts have taken patients with some residual hearing and trained their ears to be more sensitive to the affected frequencies. This wouldn’t work for patients with profound hearing loss, however.

Most retraining is also based on the assumption that reorganization of the brain – that is, changing how frequencies “map” to regions of the auditory cortex – is a cause of the tinnitus. This is the opposite of Bao’s conclusion.

“We argue that reorganizing the cortical map should be the goal, so that the nerves get some input and stop their tinnitus activity,” he said. “You don’t want to leave these cells without sensory input.”

“We changed our (brain training) strategy from one where we completely avoided the tinnitus domain to one where we directly engage it and try to redifferentiate or reactivate it, and we seem to be seeing improvement,” Merzenich said.

Drugs can boost inhibitors

Another treatment strategy, Bao said, is to find or develop drugs that inhibit the spontaneous firing of the idle neurons in the auditory cortex. Hearing loss causes changes at junctions



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Tinnitus Discovery Could Lead To New Ways To Stop The Ringing
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between nerve cells, the so-called synapses, that both excite and inhibit firing. His experiments showed that tinnitus is correlated with lower levels of the inhibitory neurotransmitter GABA (gamma-aminobutyric acid), but not with changes in the excitatory neurotransmitters.

He demonstrated that two drugs that increase the level of GABA eliminated tinnitus in rats. Unfortunately, these drugs have serious side effects and cannot be used in humans. He has applied for several grants to start screening drugs for their ability to enhance GABA receptor function, increase the synthesis of GABA, slow the re-uptake of GABA around nerve cells, or slow its enzymatic degradation.

"Our findings will guide the kind of research to find drugs that enhance inhibition on auditory cortical neurons," Bao said. "There are a lot of things we can do to change GABA functions, some of which could potentially alleviate tinnitus with fewer side effects."

Bao's colleagues include post-doctoral fellow Sungchil Yang, who developed a new technique to measure tinnitus behaviors in rats with hearing loss, and research associates Benjamin D. Weiner and Li S. Zhang of the Wills Neuroscience Institute, and post-doc Sung-Jin Cho of UC Berkeley's Department of Molecular and Cell Biology.

The research was supported by the American Tinnitus Association and the National Institutes of Health's National Institute on Deafness and other Communicative Disorders.

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