



# The EarDrum

Virginia Lions Hearing Foundation & Research Center, Inc.  
Box 800477 UVA Health System  
Charlottesville, VA 22908-0477  
434-296-5466

Spring 2015

## Message from the President

I want to thank all those clubs that have donated, thus far, to VLHF. We are seeing a little increase in what was donated last year at this time; keep up the good work. This is our foundation; help support our efforts.

Just a little bit about the foundation. We are growing; the Doctors and their research staff members are working hard for our foundation. Some of the Doctors have even made trips to Lions districts to present a program on what they are doing. Dr. Kessler made the long trip from Charlottesville to Hampton to do a presentation at the 24-D Fall Conference; he will also be making a presentation at the Brookville-Timberlake Lions Club this April.

Dr. Hashasaki will be doing a very big presentation at the Lions of Virginia State Convention in May, speaking at the annual Luncheon of the Lions of Virginia Foundation.

Word is getting around as to what we are all about and what we are trying to do. This is being accomplished by the VLHF Board members visiting clubs in their respective Districts and placing articles in their District newsletters.

This past January we held our quarterly board meeting, and it was well attended. There are some changes coming down the line which we will have to vote on during our annual meeting in July. The April meeting is when we will pass our budget for the upcoming year. We are hoping we will have all our board members in attendance.

I would like to take this time to thank VLHF Board members for their support during the past two years. It has been a pleasure taking on this position.

Yours in Lionism,

*Lion Rich*

Lion Rich Evans, PDG  
President, VLHF

## Executive Director's Message

Our current Lions year is galloping toward its symbolic finish line. Lions throughout Virginia are working to assist the many people and groups who need our help. We are living our motto, "We Serve."

The members of the Hearing Foundation's medical staff also work steadily to serve people with hearing-related problems through patient care and both basic and applied research projects.

More than 95% of the contributions which the Virginia Lions Hearing Foundation and Research Center, Inc., receives come from Virginia's Lions Clubs and individual Lions. Lions' contributions to the Hearing Foundation assist VLHF Medical Director Dr. George Hashisaki and his fellow researchers to continue their research projects and get closer to their ultimate goals.

If your Lions Club did not donate to the Hearing Foundation last year, please do so this year. Your financial assistance to hearing research is a prime example of your adherence to the Lions motto. We serve with funds as well as with work.

Yours in Lionistic Service,

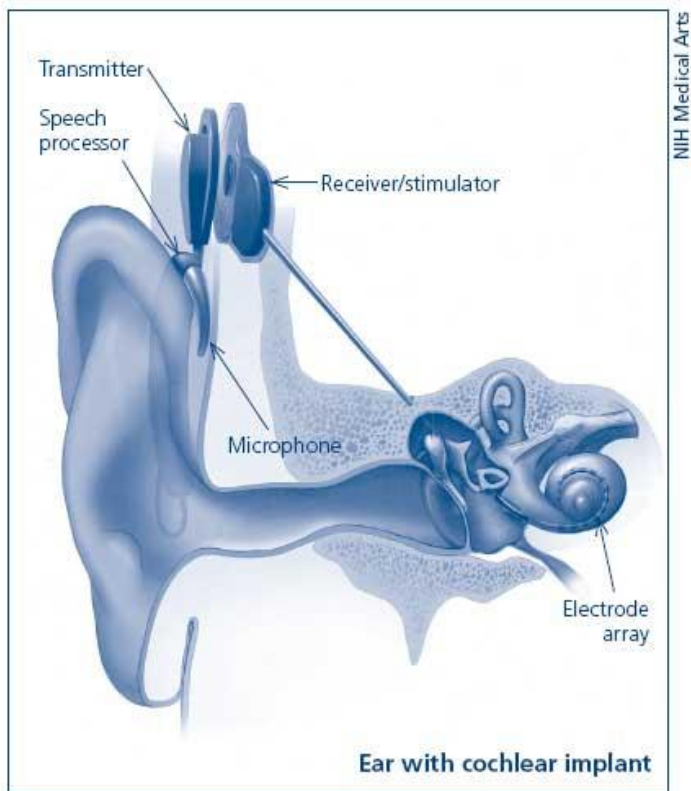
*Don*

Lion Don Colley, PCC  
Executive Director, VLHF

# Cochlear Implants: Questions and Answers

*Adapted from material provided by NIDCD*

*What is a cochlear implant?*



Ear with cochlear implant.  
Credit: NIH Medical Arts

A cochlear implant is a small, complex electronic device that can help to provide a sense of sound to a person who is profoundly deaf or severely hard-of-hearing. The implant consists of an external portion that sits behind the ear and a second portion that is surgically placed under the skin. An implant has the following parts:

Externally, a microphone, which picks up sound from the environment; a speech processor, which selects and arranges sounds picked up by the microphone, and a transmitter and receiver-stimulator, which receive signals from the speech processor and convert them into electrical impulses.

An electrode array, which is a group of electrodes, collects the impulses from the stimulator and sends them to different regions of the auditory nerve.

An implant does not restore normal hearing. Instead, it can give a deaf person a useful representation of sounds in the environment and help the individual to understand speech.

*How does a cochlear implant work?*

A cochlear implant is very different from a hearing aid. Hearing aids amplify sounds so they may be detected by damaged ears. Cochlear implants bypass damaged portions of the ear and directly stimulate the auditory nerve. Signals generated by the implant are sent by way of the auditory nerve to the brain, which recognizes the signals as sound. Hearing through a cochlear implant is different from normal hearing and takes time to learn or relearn. However, it allows many people to recognize warning signals, understand other sounds in the environment, and enjoy a conversation in person or by telephone.

*Who gets cochlear implants?*

Children and adults who are deaf or severely hard-of-hearing can be fitted for cochlear implants. According to the Food and Drug Administration (FDA), as of December 2012, approximately 324,200 people worldwide have received implants. In the United States, roughly 58,000 adults and 38,000 children have received them.

Since 2000, cochlear implants have been FDA-approved for use in eligible children beginning at 12 months of age. For young children who are deaf or severely hard-of-hearing, implantation while young exposes them to sounds during an optimal period to develop speech and language skills. A growing body of research, much of it funded by the National Institute on Deafness and Other Communication Disorders (NIDCD), has shown that when these children receive a cochlear implant followed by intensive therapy before 18 months of age, they are better able to hear, comprehend sound and music, and speak than their peers who receive implants when they are older. Studies have also shown that eligible children who receive a cochlear implant at a young age develop language skills at a rate comparable to children with normal hearing, and many succeed in mainstream classrooms.

*(Continued on Page 3)*

## **Cochlear Implants - Continued**

Some adults who have lost all or most of their hearing later in life can also benefit from cochlear implants. They learn to associate the signal provided by an implant with sounds they remember. This often provides these individuals with the ability to understand speech solely by listening through the implant, without requiring any visual cues such as those provided by lip reading or sign language.

### *How does someone receive a cochlear implant?*

Use of a cochlear implant requires both a surgical procedure and significant therapy to learn or relearn the sense of hearing. Not everyone performs at the same level with this device. The decision to receive an implant should involve discussions with medical specialists, including an experienced cochlear-implant surgeon. The process can be expensive. A person's health insurance may cover the expense, but not always. Some individuals may choose not to have a cochlear implant for a variety of personal reasons. Surgical implantations are almost always safe although complications are a risk factor as with any kind of surgery. An additional consideration is learning to interpret the sounds created by an implant. This process takes time and practice. Speech-language pathologists and audiologists are frequently involved in this learning process. Prior to implantation, all of these factors need to be considered.

### *What does the future hold for cochlear implants?*

With advancements in technology and continued follow-up studies with people who already have received implants, researchers are evaluating how cochlear implants might be used for other types of hearing loss.

NIDCD is supporting research to improve upon the benefits provided by cochlear implants. It may be possible to use a shortened electrode array, inserted into a portion of the cochlea, for individuals whose hearing loss is limited to the higher frequencies. Other studies are exploring ways to make a cochlear implant convey the sounds of speech more clearly. Researchers also are looking at the potential benefits of pairing a cochlear implant in one ear with either another cochlear implant or a hearing aid in the other ear.

### *Where can I get more information?*

The NIDCD maintains a directory of organizations that provide information on the normal and disordered processes of hearing, balance, smell, taste, voice, speech, and language. Please see the list of organizations at [www.nidcd.nih.gov/directory](http://www.nidcd.nih.gov/directory).

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## **Hearing Foundation Board of Directors Meeting Scheduled**

The Virginia Lions Hearing Foundation and Research Center, Inc., board of directors will meet on Saturday, April 11 2015, in the Riggs Auditorium on the second floor of the West Complex of the University of Virginia Medical Center, beginning at 11:00 a.m.

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## **Sound Facts About Noise**

More than 30 million Americans are exposed to hazardous sound levels on a regular basis. Individuals of all ages - children, adolescents, young adults, and older people - can develop noise-induced hearing loss. Noise-induced hearing loss can be caused by a one-time exposure to an extremely loud sound, impulse sound, as well as by repeated exposure to sound at various loudness levels over an extended period of time.

Exposure occurs in the workplace, in recreational settings, and at home. Noisy recreational activities include target shooting and hunting, snowmobiling, go-cart riding, woodworking and other noisy hobbies, playing with cap guns and model airplanes, and listening to popular music played at a high audio level.

Sources of harmful noises at home include vacuum cleaners, garbage disposals, gas-powered lawn mowers, leaf blowers, and shop tools. And where the person lives makes no difference. Both urban and rural settings offer their own noise on a daily basis.

Of the millions of Americans who have some degree of hearing loss, more than one-half have not had their hearing problems corrected. About one-third of

## **Sound Facts - *continued***

hearing-impaired people can attribute their hearing loss, at least in part, to noise.

The loudness of sound is measured in units called decibels. Normal conversational speech is approximately 60 decibels; the humming of a refrigerator is 40 decibels; and heavy city-traffic noise can be 85 decibels. Sources of loud noises that cause hearing loss include motorcycles, firecrackers, and firearms, all emitting sounds from 120 to 150 decibels. Sounds of less than 80 decibels, even after long exposure, are unlikely to cause hearing loss.

Exposure to harmful sounds causes damage to the sensitive hair cells of the inner ear as well as to the hearing nerve. These structures can be injured by two kinds of noise: loud impulse noise such as an explosion or loud continuous noise such as that generated in a woodworking shop or by a lawn mower. The ambient noise level is too high if a person must raise his voice to be heard at a normal conversational distance.

Hearing loss from noise is preventable. All individuals should understand the hazards of noise and should practice good health in everyday life.

- Know which noises can cause hearing damage (those above 85 decibels).
- Wear earplugs or other hearing protective devices when involved in a loud activity (special earplugs and earmuffs are available at hardware stores and sporting good stores).
- Be alert to hazardous noise in the environment.
- Protect children who are too young to protect themselves.
- Make family, friends, and colleagues aware of the hazards of noise.

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