



## NIH NEWS RELEASE

---

NATIONAL INSTITUTES OF HEALTH

NATIONAL INSTITUTE ON DEAFNESS AND  
OTHER COMMUNICATION DISORDERS

---

EMBARGOED FOR RELEASE  
October 10, 2000 at 4:00 p.m. EDT

Contacts: Marin Allen, Ph.D.  
Sharon Ricks  
(301) 496-7243

### **NIDCD/VA Clinical Trial Finding Can Benefit Millions with Hearing Loss**

Twenty million Americans have sensorineural hearing loss, but only 4 million of the those individuals actually use hearing aids. Hearing aids are the main form of treatment for this condition. An unprecedented clinical trial comparing the effectiveness of three types of commonly used hearing aids shows that all three provide substantial improvement for individuals with bilateral sensorineural hearing loss. The trial was a first-of-its-kind collaboration between the National Institute on Deafness and Other Communication Disorders and the Department of Veterans Affairs Cooperative Studies Program. The study is published in the October 11, 2000 issue of *JAMA*.

Sensorineural hearing loss is one of the most prevalent disabling conditions in the United States. It can harm an individual's physical, cognitive, behavioral, and social function and is caused by a problem in the cochlea or the auditory nerve, parts of the ear that help sound impulses reach the brain. NIDCD Director James F. Battey, Jr., M.D., Ph.D. says, "This research demonstrates the usefulness of clinical trials in providing health professionals and people with hearing loss with the best intervention strategies and offers Americans with hearing loss a wonderful opportunity to improve their quality of life."

-MORE-

The trial, conducted from May 1996 to February 1998, involved 360 men and women ranging in age from 29-91 years with bilateral sensorineural hearing loss. About 70 percent were military veterans, and about half had never used a hearing aid. Participants wore each type of hearing aid for three months. Hearing aid circuits tested were:

- linear peak clipper (PC) - amplifies input sounds linearly up to its maximum output capabilities, such that when input sounds go up by 10 dB, so do output sounds;
- compression limiter (CL) - amplifies input sounds linearly up to a predetermined level, however after a certain point, the output is reduced automatically by a fixed ratio; and
- wide dynamic range compressor (WDRC) - allows input signals that vary in level over a wide range to be amplified as a narrower range of output signals.

Researchers found that all three types of hearing aid circuits:

- Improved speech recognition of one-syllable words by an average of 29 percent;
- Improved recognition of connected speech by 10 to 30 percent in noise and greater improvements for speech at soft and conversational levels;
- Improved quality of speech for soft and conversational speech levels (and did not significantly degrade the overall quality of listening for loud speech); and
- Significantly reduced the frequency of problems encountered in verbal communication.

The major finding was that each of the three circuits provided significant benefit both in quiet and in noise. The differences among the circuits were small compared with benefits. For example, the CL and the WDRC provided slightly more benefit in some situations than PC circuits. Participants rated the CL circuit as most preferred.

The clinical trial was a comprehensive federal collaboration between the NIDCD and the Department of Veterans Affairs Cooperative Studies Program. NIDCD supports and conducts research and research training on normal and disordered processes of hearing, balance, smell, taste, voice, speech and language and develops and disseminates health information based on scientific discovery. The Department of Veterans Affairs provides medical care to America's veterans and conducts research programs on a wide array of medical issues.

- # # # -

---

*To schedule an interview with NIDCD staff or to learn more about the study, hearing aids or sensorineural hearing loss, please contact the NIDCD Office of Health Communication and Public Liaison at (301) 496-7243 and visit our Web site at: [www.nih.gov/nidcd](http://www.nih.gov/nidcd).*

*To conduct an interview with the study's Principal Investigator, Vernon D. Larson, Ph.D., or one of his collaborators at the VA, please call the Department of Veterans Affairs Medical Center Public Affairs Office at (202) 745-8209.*