



# VA ResearchCurrents

## Audiology researcher wins Magnuson Award

**S**tephen A. Fausti, PhD, received the Magnuson Award, VA's highest award for rehabilitation investigators, in March at the national meeting of the American Academy of Audiology in Salt Lake City.

Fausti directs VA's National Center for Rehabilitative Auditory Research at the Portland VA Medical Center and is a professor in the department of otolaryngology at Oregon Health and Science University. He has gained international recognition for his pioneering research and clinical expertise in assessing high-frequency auditory sensitivity and using high-frequency testing for early identification of hearing loss caused by ototoxicity.

Fausti began his VA research career in the 1970s. At the time, animal models had shown that toxic effects on

the ears—such as from certain drugs—typically appeared first in the basal region of the cochlea, where higher-frequency sounds are processed.

Fausti realized that to detect the earliest stages of hearing loss in patients receiving ototoxic drugs, hearing sensitivity should be monitored at the higher frequencies. These higher frequencies are not critical for speech recognition, so early detection of problems and a subsequent change in drug regimen could prevent serious functional losses for veterans.

Fausti engineered special audiometers to accomplish this and published the first papers describing the reliability of high-frequency thresholds and their use in early detection of ototoxic-

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## Portland study links diabetes, hearing loss

Diabetes may lead to premature aging of the auditory system, according to preliminary data from a five-year study of 694 veterans aged 25 to 85. The findings were presented in February at a meeting of the Association for Research in Otolaryngology by Nancy Vaughan, PhD, Daniel J. McDermott, MA, and Stephen Fausti, PhD, of VA's National Center for Rehabilitative Auditory Research (NCRAR) in Portland.

“There are so many microvascular and neuropathic complications with diabetes, it just seems logical that there should be some effect on hearing,” study leader

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### Update from Health Services Research and Development (HSR&D)

## Examining race and mortality in VA congestive heart failure patients

By John G. Demakis, MD, director

Blacks have a higher prevalence of congestive heart failure (CHF) than whites. They also have higher rates of hospitalization and readmissions that may be linked to disparities in access to care.

VHA offers equal access to health care, unrestricted by insurance status or ability to pay, and thus provides an excellent opportunity to compare outcomes among a large, racially diverse cohort of patients. Such a study was recently led by Anita Deswal, MD, of VA's Houston Center for Quality of Care and Utilization Studies. The study, published in the March 3, 2004, *Journal of the American*

*College of Cardiology*, was funded by HSR&D and VA's Chronic Heart Failure Quality Enhancement Research Initiative (CHF-QUERI). The researchers explored the effect of race on short-term and intermediate-term mortality in VHA patients hospitalized for CHF, and examined patterns of health care utilization.

The study included 4,901 black and 17,093 white patients hospitalized with heart failure at 153 acute care VA hospitals between Oct. 1997 and Sept. 1999. During the initial admission, mortality rates were lower in blacks

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## Recent publications and presentations

*The following is a sampling of recent publications and presentations by VA researchers. Due to space constraints, only VA-affiliated authors are listed. Send notifications of upcoming or recent publications and presentations to VA R&D Communications at [researchinfo@vard.org](mailto:researchinfo@vard.org).*

“Adherence of Mass Vaccinators to Timing Guidelines for Influenza Vaccination.” Sarah J. D’Heilly, MD; Kristin L. Nichol, MD, MPH. **Minneapolis.** *American Journal Of Preventive Care*, Jan. 2004.

“Allergy to Corticosteroids: Update and Review of Epidemiology, Clinical Characteristics, and Structural Cross-Reactivity.” Erin Warshaw, MD. **Minneapolis.** *American Journal of Contact Dermatology*, Dec. 2003.

“Cortical Activity Reductions During Repetition Priming Can Result from Rapid Response Learning.” David M. Schnyer, PhD; Mieke Verfaellie, PhD. **Boston.** *Nature*, March 18, 2004.

“Cost-Effectiveness of Interventions to Reduce Vertical HIV Transmission from Pregnant Women Who Have Not Received Prenatal Care.” Joseph Mrus,

MD, MSc; Joel Tsevat, MD, MPH. **Cincinnati.** *Medical Decision Making*, Jan. – Feb. 2004.

“The Hawaii Vietnam Veterans Project: Is Minority Status a Risk Factor for Posttraumatic Stress Disorder?” Matthew J. Friedman, MD, PhD; Paula P. Schnurr, PhD; Anjana Sengupta, PhD; Marie Ashcraft, PhD. **White River Junction and Seattle.** *Journal of Nervous and Mental Disease*, Jan. 2004.

“Macrophage Migration Inhibitory Factor is Upregulated in an Endotoxin-Induced Model of Bladder Inflammation in Rats.” Katherine L. Meyer-Siegler, PhD; Raul C. Ordorica, MD; Pedro L. Vera, PhD. **Bay Pines and Tampa.** *Journal of Interferon and Cytokine Research*, Jan. 2004.

“Management of Community-Acquired Pneumonia in Persons with Spinal Cord Injury.” Stephen P. Burns, MD; Frances M. Weaver, PhD; Jorge P. Parada, MD, MPH; Charlesnika R. Evans, MPH; Heidi Chang, MPH; Raquel Y. Hampton, MS. **Hines and Seattle.** *Spinal Cord*, March 23, 2004 (*online*).

“Outcomes of Early Extubation After Bypass Surgery in the Elderly.” William L. Holman, MD; Richard M. Allman, MD. **Birmingham and Atlanta.** *Annals of Thoracic Surgery*, March 2004.

“Overexpression of Acid-Sensing Ion Channel 1A in Transgenic Mice Increases Acquired Fear-Related Behavior.” John A. Wemmie, MD, PhD. **Iowa City.** *Proceedings of the National Academy of Sciences*, March 9, 2004.

“Physician Satisfaction with Formulary Policies: Is it Access to Formulary or Non-Formulary Drugs that Matters Most?” Peter A. Glassman, MBBS, MSc; Chester B. Good, MD, MPH;

Mary E. Kelley, MS; Michael Valentino, RPh, MHSA. **Los Angeles, Pittsburgh and Hines.** *American Journal of Managed Care*, March 2004.

“The Relationship between Energy Expenditure and Lean Tissue in Monozygotic Twins Discordant for Spinal Cord Injury.” William A. Bauman, MD; Ann M. Spungen, EdD. **Bronx.** *Journal of Rehabilitation Research and Development*, Jan. – Feb. 2004.

“Sequential Therapies for Proliferative Lupus Nephritis.” Gabriel Contreras, MD, MPH; Victoriano Pardo, MD. **Miami.** *New England Journal of Medicine*, March 4, 2004.

“Skeletal Unloading Induces Resistance to Insulin-like Growth Factor-I (igf-I) by Inhibiting Activation of the igf-I Signaling Pathways.” Yongmei Wang, MD, PhD; Bernard Halloran, PhD; Hashem Z. ElAlieh; Jay Cao, PhD; Daniel D. Bikle, MD. **San Francisco.** *Journal of Bone and Mineral Research*, March 2004.

“Speed-Dependent Modulation of Leg-to-Arm Interlimb Reflex While Walking on a Treadmill.” Andrea Behrman, PhD. **Gainesville.** American Physical Therapy Association Combined Sections Conference, Feb. 2004.

“A Surprise Trend in Suicides: Were they Accidental?” Karen Maudlin, RN, MS. **Bay Pines.** *Federal Practitioner*, Jan. 2004.

“The Validity of Person Trade-off Measurements: Randomized Trial of Computer Elicitation versus Face-to-Face Interviews.” Laura J. Damschroder, MS, MPH; David A. Asch, MD; Peter A. Ubel, MD. **Ann Arbor and Philadelphia.** *Medical Decision-Making*, March-April 2004. ■

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## Study probes risk in veterans' mix of drugs and dietary supplements

In a study by VA researchers and colleagues, more than 40 percent of veterans were taking at least one nutritional supplement or herb along with their prescription medications, but seldom did the mixed regimens pose a risk of seriously adverse consequences. The findings appear in the March 22 *Archives of Internal Medicine*.

The researchers surveyed 458 patients at the general medicine clinics of the Pittsburgh and Los Angeles VA medical centers in 1999. Nearly 50 percent of Los Angeles patients and 38 percent of Pittsburgh patients—43 percent of patients overall—were taking at least one dietary supplement or herb along with their medications. Average consumption was three supplements daily. The most widely used products were vitamins and minerals, garlic, ginkgo biloba, saw palmetto and ginseng.

Researchers checked patients' self-reported supplement usage against their

VA pharmacy files. Among the patients taking supplements, 45 percent were at potential risk for drug-supplement interactions of any significance. Most of the potential interactions involved ginseng, garlic, ginkgo and coenzyme Q-10. While literature on potential interactions was sparse, the authors determined that only about 5 percent of the interactions would likely cause serious problems.

"Most of the potential drug-dietary supplement interactions were ... likely to be minor or 'theoretical,' although they could still perhaps be bothersome or partially interfere with or potentiate other therapies," wrote lead author Catherine C. Peng, Pharm.D., and colleagues. Peng was a pharmacist at the VA Pittsburgh Healthcare System at the time of the study.

Among those who took supplements, 70 percent of East Coast patients and 40 percent of West Coast patients had never discussed the topic with their

primary care doctor. Of those patients, 59 percent in Pittsburgh and 90 percent in Los Angeles said their doctor never asked.

While the incidence of potentially harmful interactions may be low, the authors maintain that safety problems may be under-recognized and under-reported, and that their study underscores the need for doctors to ask patients about their use of supplements and report any adverse reactions to the Food and Drug Administration. ■

### HEART (cont. from page 1)

than in whites—3.3 versus 4.9 percent. Moreover, mortality at 30 days, one year, and two years was lower in blacks than whites: 4.6 versus 7.3 percent; 20 versus 25.8 percent; and 30.5 versus 37.5 percent, respectively.

Blacks had the same rate of readmissions, a slightly lower rate of medical outpatient clinic visits, and a slightly higher rate of urgent care visits compared to whites.

In sum, this study found significant differences in short-term and intermediate-term mortality by race, but relatively small differences in patterns of health-care utilization after a hospitalization for CHF. The health care utilization findings from this study do not readily explain the observation of better survival in black patients.

Differences in processes of care might explain the mortality difference, but other recent VA studies suggest that process of care in VA hospitals does not vary significantly by race. To the extent that the patient-physician interaction may be a factor in any disparities, interventions to make physicians more aware of cultural diversity and bias may be helpful, both in VA and non-VA settings. ■

### AWARD (continued from page 1)

ity. His work led to national guidelines for early identification and monitoring of ototoxicity.

Since many patients being treated with ototoxic drugs are unable to respond to behavioral auditory tests, Fausti developed ways to obtain electrophysiological measures of high-frequency hearing in these patients, independent of their ability to respond actively.

Fausti's work has also improved the understanding and evaluation of tinnitus. The Programmable Auditory Laboratory (PAL) 3000—based on Fausti's original design—will soon be evaluated at several VA medical centers as an automated protocol for measuring tinnitus. Other technology developed by Fausti is now being engineered for compatibility with portable, pocket PC platforms to enhance clinicians' ability to provide early identification and monitoring of ototoxicity.

The Magnuson Award honors Paul B. Magnuson, a bone and joint surgeon and chief medical director for VA in the years after World War II. Magnuson Award winners receive a \$5,000 cash award and a plaque, along with an additional \$50,000 per year for three years to support a currently funded, nationally peer-reviewed research project.

## Career milestones

**Robert L. Ruff, MD, PhD**, chief of neurology at the Cleveland VAMC, has been detailed to Washington, DC, to serve as acting director of VA's Rehabilitation Research and Development Service. Ruff, a VA researcher since 1984, has conducted studies on endocrine myopathy and surface membrane excitability, and designed experimental models for glycogen storage diseases and periodic paralysis. His major clinical interests are neuro-oncology and the treatment of neuromuscular and cerebrovascular diseases.

**Eugene C. Butcher, MD**, Palo Alto, is co-recipient of the 2004 Crafoord Prize in Polyarthritis from the Royal Swedish Academy of Sciences for his studies of the molecular mechanisms of white-blood-cell migration. Butcher has identified several proteins, the selectins, which are located in the cell membranes of white blood cells. These proteins bind to carbohydrate chains on the surface of blood vessels and regulate the movement of white blood

cells throughout the body. Butcher will share the \$500,000 cash prize with Dr. Timothy Springer of Harvard Medical School.

**Sheri Keitz, MD, PhD**, a staff physician at the Durham VAMC and researcher with VA's Center of Excellence in Primary Care, is co-recipient of the first Master Clinician/Teaching Award from the Duke University School of Medicine, where she is an assistant professor of medicine and director of the school's Managed Care Learning Center. Keitz also directs the PRIME program in Durham, which provides training in primary care for medical residents.

**Susan K. Keay, MD, PhD**, Baltimore, was named Researcher of the Year for 2003 by the National Interstitial Cystitis (IC) Association. Keay, a staff physician in infectious diseases and Career Development awardee for VA, is a leading authority on IC, a painful bladder disorder. She has identified a toxin in the urine of IC patients that may be useful as a noninvasive diagnostic marker for the disease. ■

## DIABETES (cont. from page 1)

Vaughan told a reporter for the *American Medical News*.

Epidemiologic studies have suggested a link between diabetes and hearing loss, but experts have struggled to separate the auditory effects of diabetes from those of cardiovascular disease—a common diabetes complication—or advancing age.

In the NCRAR study, the largest prospective study yet on diabetes and auditory function, diabetic patients under age 60 showed greater hearing loss than their non-diabetic age peers. The researchers theorize that in older patients, age-related hearing loss, or presbycusis, may obscure diabetes-related hearing loss.

Further analysis of the data should yield clues as to the effects of specific factors in diabetes—such as damage to nerves or small blood vessels—on auditory structure and function.

The poster from the study can be viewed at NCRAR's website: [www.ncrar.org](http://www.ncrar.org). ■

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