

Fostering the health and well-being of Veterans through research impacting visual and/or neurocognitive function

New Project Focus: The Potential of Aerobic Exercise to Improve Language Function in Older Adults

Much attention has been devoted recently to looking at the beneficial link between exercise and cognition in older adults. The positive effects of exercise are thought to involve the more complex thinking processes such as working memory, switching between tasks, and inhibiting irrelevant information. Importantly, these are processes that are most susceptible to age-related decline and neurologic disease.

Despite promising cognitive improvements shown with exercise in older adults, changes in language functions have been widely ignored. “This is unfortunate,” states Dr. Joe Nocera, a research scientist interested in how exercise can promote brain health, “since difficulty with word retrieval impairs one’s ability to communicate effectively. This can lead to frustration, depression, withdrawal, and, particularly in the elderly, may lead to difficulties interacting with health care professionals causing further health care burden. Since cognition—particularly word retrieval difficulties—usually remain untreated, we believe it is important to find treatment strategies for minimizing these deficits.”

In Dr. Nocera's current study, *Aerobic Exercise and Cognitive Training in Older Adults*, he examines the benefits exercise may have in improving everyday activities in sedentary older adults. Enrollment has been going on for about a year now. “It's been hard finding sedentary candidates,” Dr. Nocera confesses. “Obviously, a lot of people know that exercise may be beneficial and are doing it. We've got a while to go and we hope to enroll 60 people during the next two years.”

(continued on page 2)



Joe Nocera, PhD

ALSO inside this issue:

Upcoming Events

Page 2

Participant Perspective—Managing Combined Vision and Hearing Loss

Page 3

Word from the Director

Page 4

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Exercise to Improve Language *(continued from page 1)*

Participants in the study will be randomly assigned to one of two types of exercise groups and all will do cognitive training. The exercise will follow the same format shown to improve a broad range of executive functions in older adults from previous research. The cognitive training will use a popular commercially available brain fitness program that has demonstrated specific cognitive improvements and high adherence. "Thus far, people seem to really enjoy participating in the study," states Dr. Nocera.

The results of the 12-week training will be evaluated with a variety of measures ranging from cognitive function tests for verbal fluency and working memory, to structural and functional magnetic resonance imaging (MRI). Participants will also be evaluated on their physical function such as walking, balance, and aerobic capacity. "I am very interested in how exercise can lessen cognitive and mobility disability," says Dr. Nocera. "My long term goal is to better understand how aging affects both mobility and cognitive impairment in older adults with and without neurological disease so that we can design optimal interventions aimed at lessening the decline."

Joe Nocera, Ph.D., is a CVNR Research Scientist and an Assistant Professor at Emory University, Department of Neurology. He is the Principal Investigator of *Aerobic Exercise and Cognitive Training in Older Adults*, a Career Development Award-2 sponsored by the Rehabilitation Research and Development Service of the Department of Veterans Affairs. For more information about this study, please contact Holly Hudson, at (404) 321-6111, x 7099.

UPCOMING EVENTS:

SYMPOSIUM ON VISUAL REHABILITATION

SPONSORED BY THE ATLANTA VA CENTER OF EXCELLENCE FOR VISUAL AND NEUROCOGNITIVE REHABILITATION (CVNR)
AND THE EMORY EYE CENTER

FEATURED SPEAKERS: **NICK GIUDICE, PHD, Lei Liu, PHD, and Loffi Merabet, OD, PHD, MPH**

WITH PANELISTS: **Susan Primo, OD, MPH, FAAO, Beau Bruce, MD, and Michael Williams, PhD**

Friday, March 21, 2014, NOON—3pm @ Calhoun Auditorium, Emory Clinic Building B

Please RSVP to CVNR@VA.GOV

FOURTH ANNUAL BETTYE ROSE CONNELL DISTINGUISHED LECTURE: THE BRAIN AND EXERCISE

SPONSORED BY THE ATLANTA VA CENTER OF EXCELLENCE FOR VISUAL AND NEUROCOGNITIVE REHABILITATION (CVNR)
AND THE EMORY CENTER FOR HEALTH IN AGING

ART KRAMER, PHD, DIRECTOR OF THE BECKMAN INSTITUTE FOR ADVANCED SCIENCE & TECHNOLOGY

Keynote Address: Tuesday, April 1, 2014, 5pm—6pm @ Rollins School of Public Health, Emory University

Panel Discussion: Wednesday, April 2, 2014, 9:00am—10:00am @ The Gathering Place, Atlanta VAMC

Please RSVP to <http://bit.ly/1jQYf83>

ATLANTA VA DEMENTIA COMMITTEE'S BI-ANNUAL DEMENTIA EDUCATION AND TRAINING CONFERENCE

Thursday, April 24, 2014, 8am—Noon @ The Gathering Place, Atlanta VAMC

ATLANTA VAMC RESEARCH DAY

SAVE THE DATE: Thursday, May 22, 2014 @ Atlanta VA Atrium

For more information on these events, please visit our website www.varrd.emory.edu

Participant Perspective: Gaining Skills for Managing Combined Vision and Hearing Loss *by Lavelle Beene*



Mr. Lavelle Beene

Although I have both vision and hearing loss, spending six 2-hour weekly sessions with other Veterans in my same boat was, frankly, not on my “to do” list. But when Aaron Bozzorg, the study coordinator, told me about the research, I decided I wanted to help. I knew I could take the many vision and hearing tests and do the questionnaires before and after the groups happened, but would we Veterans who participated in the group session really learn new techniques to better manage our vision and hearing loss? The prospect became a compelling reason to sign on.

The group facilitator Marty McDonald, visually impaired herself, got and kept my attention from the start. Accepting the reality of vision and hearing loss isn't easy, but as we shared our experiences, there was a clear sense the others around the table faced similar hurdles each day. We learned to breathe and stretch—good for when you get angry or frustrated with yourself or with the realities of vision and hearing loss. We learned about an amazing array of technologies and devices the VA makes available to help! Specialists from the Eye Clinic and Audiology demonstrated these and answered our questions. The other Veterans in the group inspired me to try things that worked for them... and I could always make some adjustments for better results, too.

To me, the heart of the intervention was the “Problem Solving Skills” session emphasizing the need to manage mind and body through specific thought and action. The idea is to self-advocate and confidently:

- Build on our successful experiences overcoming other life challenges.
- Seek assistance.
- Take advantage of VA resources.
- Use technologies.
- Be patient with ourselves.
- Keep focused on what we can do, rather than what we can't do.



Dr. Echt would remind us “Keep your eye on the donut and not the hole!”

The VA Rehabilitation R&D Project *Self Management Groups for Veterans with Dual Sensory Loss* (C7460P) was developed by Mitchel Turbin, Ph.D., at the Portland VA National Center for Research in Auditory Rehabilitation (NCRAR) in collaboration with Katharina Echt, Ph.D., at the Atlanta VA Center for Visual and Neurocognitive Rehabilitation (CVNR). This study developed and evaluated a self-management group curriculum targeting the specific needs of outpatient Veterans with co-occurring vision and hearing loss, using an integrated service delivery approach.



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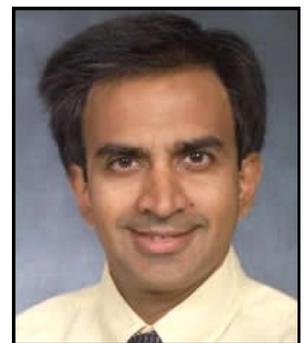
A Word from Our Director

Our Center of Excellence for Visual and Neurocognitive Rehabilitation (CVNR) embraces a variety of research fields and approaches, all relevant to rehabilitation research and development, with a focus on Veterans' health.

One might well ask, "Why this variety of research fields and approaches? Why not just one kind?" The usual answer to this question is that bringing people together from different backgrounds allows collaborations to develop and brings synergies to bear on particular problems. Well, now empirical evidence supports this idea.

In a recent article in *Science* by Uzzi and colleagues (25 Oct 2013), the authors reported that the "highest-impact science is primarily grounded in exceptionally conventional combinations of prior work yet simultaneously features an intrusion of novel combinations." The article goes on to reveal that such novel combinations were much more likely to result from teams rather than single authors.

This resonates well with what we do in the CVNR: bring investigators from different disciplines together and facilitate their interactions in order to enhance the quality of our work and accelerate delivery of benefits to Veterans.



Krish Sathian, MD, PhD
Executive Director