National Institute on Aging

Emory University School of Medicine Alzheimer's Disease Research Center

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INSIDE THIS ISSUE:

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Gene Therapy: A 21st Century Approach

JAMES LAH, MD, PHD

Researchers across the country are beginning the first Phase 2 clinical trial to test gene therapy treatment for Alzheimer's disease (AD). Scientists are actively looking for new and more innovative ways to treat this disease, and now, for the first time, the efficacy of a gene therapy called CERE-110 is being tested. Researchers at Emory are excited about the opportunity to participate in this cutting edge research study.

Previously, CERE-110 was carefully studied in animals and in a small study to assess safety in humans. These studies showed that CERE-110 can safely induce long-term production of Nerve Growth Factor (NGF) in brain cells. The experimental treatment utilizes a viral-based gene transfer system that makes NGF, a naturally occurring protein that maintains nerve cell survival in the brain. CERE-110 is designed to deliver the genes for nerve growth factor (NGF) directly into the brain. CERE-110 is administered by injection into the area of the brain that is damaged or at risk of being damaged by AD. After the injection, study participants will be regularly monitored by researchers for 2 years to determine safety and how well the treatment works.

"The reasoning behind this study is that NGF supports the survival and function of an important group of nerve cells called 'cholinergic neurons', which are especially vulnerable in patients with AD," says James Lah, MD, PhD, principal investigator. "These special neurons are the main source of the chemical acetylcholine in the brain, and malfunction or death of cholinergic neurons lowers acetylcholine levels throughout the brain. We believe that this is one of the reasons AD patients experience memory loss, and most of the drugs that have been proven to benefit patients with AD work by increasing the levels of acetylcholine. By using gene therapy to deliver NGF directly to the cholinergic neurons, we hope to promote their survival, improve patients' memory and other symptoms, and slow the progression of disease."

In this Phase 2 Clinical Study, all participants will be randomized by chance into one of two treatment groups: half will receive CERE-110 and half will receive a placebo treatment. Once the study is completed and if the results are promising, volunteers in the placebo group will be eligible to be treated with CERE-110.

This study is sponsored by the Alzheimer's Disease Cooperative Study (ADCS) through a grant from the National institute on Aging (part of the National Institutes of Health) in association with Ceregene, Inc., which developed and will provide the active agent (CERE-110) used in this study. Emory has partnered with the ADCS on multiple other clinical trails, and researchers are pleased to announce that this new study is currently enrolling.

For more information, please contact the Emory ADRC at 404-728-6950. Information can also be found on the ADCS website www.adcs.org/Studies/NGF.aspx and at the NIA's Alzheimer's Disease Education and Referral (ADEAR) Center at www.alzheimers.org/clinicaltrials/fullrec.asp?PrimaryKey=308

Emory ADRC Research Update:

Memory Loss: Searching for the Cause; Searching for the Cure

Saturday, May 15, 2010 ▪ 10:00 - 11:30

Emory University Nell Hodgson School of Nursing 1520 Clifton Rd. Atlanta, GA 30322

Education and Exercise to Promote Well-Being in African American Dementia Family Caregivers


Monica Parker, MD

Drs. Monica Parker and Ken Hepburn have received support for a project to develop a psychoeducation program that is useful to and culturally appropriate for African Americans caring for a family member with dementia. Much less is known about the experience and impact of caregiving among African American families than among Caucasian family caregivers. There is evidence to suggest that African American families provide care for their relatives later into the course of the illness than do other groups. There is also clear evidence that these caregivers make less use of formal health and social services but rely more on informal sources of help from family, community, and religious/spiritual sources. Nevertheless, African American family caregivers appear to pay the same heavy psychological and health toll for being caregivers as do caregivers from other groups.

Previous caregiver research has shown that psychoeducation programs can help to relieve the stress and burden that caregivers experience in caregiving. However, there have been no psychoeducation programs that have specifically taken the African American experience of caregiving into account in their design. This new study aims to fill this important gap. The study, funded by the National Institute of Nursing Research as part of a larger study at Emory's School of Nursing, will develop a new psychoeducation program and will test it – in conjunction with an exercise program – among African American Caregivers in the Atlanta area. During the first study year, research volunteers are needed to help with the development of the program. African American family dementia caregivers are being sought to take part in focus groups that will help to design a prototype program. More volunteers will shortly be needed to take part in preliminary offerings of the psychoeducation program to ready it for field testing later in the year. For more information or to volunteer, please call 404-727-8481.


Ken Hepburn, PhD

Brain Booster Review is a new column that will review brain-boosting games, written by the former Emory ADRC education co-leader and notorious gadget-lover, Carolyn Clevenger. Dr. Clevenger is currently completing a Special Fellowship in Advanced Geriatrics at the VA Medical Center and is missed by her colleagues at the ADRC.

Brain Booster Review: by Carolyn K Clevenger, DNP, GNP-BC

Brain Age and Brain Age^2 for Nintendo DS

This game measures your baseline "brain age" and attaches a numerical value to your thinking process. Hint: best age, according to Nintendo, is 21. The game is based on studies that show improvements in thinking in study participants who performed the same type of tasks--reading aloud or solving math problems, for example. It includes memory builders as well as math, music, Sudoku, concentration and language. The DS platform allows multiple players to have accounts on the same machine and is capable of simultaneously competing with up to 4 other players each on their own machines. The last word: this game is a fun way to see visible improvements in your thinking and may be a nice way to connect generations, if you're willing to try something new.

SCORE: 3 out of 4

Pros: Baseline and repeated measurements allow for goal-setting and observable improvements; design allows for use while on-the-go (long drives or flights, waiting in a doctors office or while waiting to pick up kids at soccer practice).

Cons: The DS is a small device with a small screen; game measures how quickly you tap a stylus which may only be measuring your muscle movement and coordination.

1 brain = Probably won't hurt
2 brains = Still better than watching TV
3 brains = Fun and you might learn something
4 brains = Fun, easy and probably helpful
www.brainage.com

Clinical Trials & Research Studies Spring 2010

Emory Alzheimer's Disease Research Center

Wesley Woods Health Center, 1841 Clifton Rd., Atlanta, GA 30329
Grady Neurology Clinic, 80 Jesse Hill Jr. Drive SE, Atlanta, GA 30303
404-728-6950 http://med.emory.edu/ADRC/

Research Study	Eligibility	Contact Person
Honor Research Registry Longitudinal study of changes in memory and other cognitive skills	• Aging people over 65 with no memory problems • People of any age with mild cognitive impairment, Alzheimer's disease or other forms of dementia • Interested in participating in additional research studies at the Emory ADRC • Study partner available to participate in visits	Katelyn Perkins 404-728-6950 kgperki@emory.edu
Registry for Remembrance: An initiative to increase awareness & participation in neurology research	• Ethnic persons with African Ancestry • Aging people over 60 with no memory problems or people of any age with mild memory problems or Alzheimer's • Study partner available to participate in visits	LaShonda Strozier 404-728-6395 lstrozi@emory.edu
Vaccine Trials	• Diagnosis of *mild to moderate* Alzheimer's disease; Age 50 and older • Stable on medications for Alzheimer's for three months • Study partner available to accompany to all visits	Deborah Stout 404-728-6590 dstout@emory.edu
Concert (Dimebon) Study	• Diagnosis of *mild to moderate* Alzheimer's disease; Age 50 and older • Stable on medications	Andrea Kippels 404-728-6443 ajkippe@emory.edu
Constellation (Dimebon) Study	• diagnosis of *moderate to severe* Alzheimer's, age 50 and older • Taking Namenda for six months • Study partner available to participate in all visits.	Ann Snider 404-728-6541 asnider@emory.edu
Lewy Body Disease	• Diagnosis of Lewy Body Dementia • Stable on medications • Willing to spend 48 hours in a sleep research lab	Donald Bliwise, Ph.D. 404-728-4751
Memory Rehabilitation Intervention in Amnestic Mild Cognitive Impairment	• Diagnosis of amnestic mild cognitive impairment • Study partner who can attend all cognitive rehabilitation sessions • Lives within 45-driving minutes of Wesley Woods Health Center at Emory University and/or will commit to come to all training sessions	Noah Duncan 404-728-6544 nduncan@emory.edu
Cognitive Rehabilitation of Memory in Mild Cognitive Impairment Examines changes in learning, memory, and brain activity	• Diagnosis of mild cognitive impairment • Willing to undergo functional MRI	Ben Hampstead, PhD Pamela Phillps 404-712-0936 bhampst@emory.edu paphill@emory.edu
Nerve Growth Factor: Gene Therapy Surgical Intervention Trial	• Diagnosis of *mild to moderate* Alzheimer's disease • Stable on medications for Alzheimer's for three months • Study partner who can attend all study visits	Stephanie Vyverberg, RN, MS, NP-C 404-728-6982 Stephanie.vyverberg@emoryhealthcare.org

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Emory Alzheimer's Disease Research Center

c/o Emory Univ. Health Sciences Development

1440 Clifton Road, Suite 112

Atlanta, Georgia 30322

Why Are We The Only Mammals to Develop Alzheimer's Disease?

The Cognitive Aging Project

Human longevity is a remarkable phenomenon. This isn't only because we can live so long, but also because most older humans remain high functioning. What is it about human biology that accounts for extreme longevity? What makes humans uniquely vulnerable to Alzheimer's disease (AD) and other neurodegenerative diseases? Why is a 45-year old human brain in the prime of life, but a 35-year-old monkey brain very old? In order to answer these questions with the greatest precision, it is important to compare humans to some of our closest primate relatives. A group of researchers at Emory University and Georgia Tech is poised to do just that. The broad aim of the study, led by Dr. James Herndon, is to examine how the aging process differentially affects females of three closely related primate species: humans, chimpanzees, and the rhesus monkey. Thanks to the collaboration between investigators at Emory's Yerkes National Primate Research Center, members of the ADRC, and the Psychology Department at Georgia Tech, we can carry out studies that would be impossible to perform anywhere else in the world.

The inclusion of chimpanzees and rhesus monkeys in this study is expected to yield insights into human aging and the characteristics that make us uniquely vulnerable to neurodegenerative diseases. Research on aging in chimpanzees has been rare. Comprehensive, systematic comparisons of human and chimpanzee aging have not been done. On the other hand, rhesus monkeys have been extensively studied as a nonhuman primate model of humans. However, despite showing age related declines in areas similar to those seen in humans, rhesus monkeys do not develop AD.

This study is restricted to females of the three species for important reasons. First, females outlive males in both humans and chimpanzees and are more likely to be affected by age-related cognitive decline. Second, the length of the lifespan beyond the reproductive years in females may play a critical role in shaping patterns of cognitive aging in these species. As it turns out, human females may be the only primates to experience menopause near the middle of their life span, when they still have many years of healthy life remaining. Although chimpanzees and rhesus monkeys undergo similar patterns of age-related hormonal changes, they do so only when they are already showing signs of senescence, at a point well past their natural life expectancy.

Women who participate in the study undergo magnetic resonance (MRI) scanning, in addition to annual testing on a battery of tests designed to evaluate memory and other cognitive abilities. We anticipate that this study will offer new insights into the biological basis of age-related functional decline in female primates, and the factors that govern successful versus unsuccessful aging. The direct comparison of age-related cognitive decline in humans and in two nonhuman primate species with distinct life histories and adaptations may yield important clues to the uniquely human predisposition to neurodegenerative diseases such as AD, which could help facilitate the development of effective treatments for this disease.

Healthy middle-aged and elderly women, as well as women that have been diagnosed with Mild Cognitive Impairment (MCI) or early Alzheimer's disease will be enrolled in this research study.

If you would like more information about participating, please contact CeeCee Manzanares via email (cmanzan@emory.edu) or telephone (404-727-9324).

For more information about the Emory Alzheimer's Disease Research Center (ADRC) or the content of the of this newsletter, please call 404.728.6950 or visit our website at www.med.emory.edu/adrc

Contact Us

Emory Alzheimer's Disease Research Center

Wesley Wood Health Center
1841 Clifton Road, NE
Atlanta, GA 30329
404-728-6950
http://med.emory.edu/ADRC

Memory Assessment Clinics

Wesley Woods Health Center
1841 Clifton Road, NE
Atlanta, GA 30329
404-728-4936

Grady Memorial Hospital
80 Butler Street, SE
Atlanta, GA 30335
404-616-4567

To Register for a Class…
Call Susan Peterson-Hazan at 404-728-6273 at least one week prior to the beginning of each class.

Class	2010 Schedule	Location
Early Memory Loss Group *(Co-sponsored by the Azlheimer's Association, Georgia Chapter)*	An 8-week class that meets: Fridays: 10:30-12:00 September 10– October 29	Wesley Woods Health Center 3rd floor Conference Room 1841 Clifton Road, NE Atlanta, GA 30329 404-728-4936 404-778-3444
Caregiver Challenges in the Middle Stage of Alzheimer's Disease *(Sponsored in part by a grant from the Wesley Woods Foundation)*	A 6-week class that meets: Fridays: 10:30 – 12:00 November 5 - December 17	
Late Stage Alzheimer's Disease *(Sponsored in part by a grant from the Wesley Woods Foundation)*	A 4-week class that meets: Fridays: 10:30 – 12:00 May 21– June 11	

Emory Alzheimer's Disease Research Center
Wesley Wood Health Center, 3rd Floor
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