Attention! Will an existing drug for ADHD provide a new approach to reduce brain inflammation and slow Alzheimer's disease?

Currently, the drugs available for the treatment of Alzheimer's Disease (AD) only temporarily improve the symptoms of the disease; they do not stop the damage to brain cells that causes Alzheimer's to progress. A new study at Emory will address the urgent need in AD for new treatments designed to delay or prevent symptom onset and progression.

In the initial stages of AD, including mild cognitive impairment (MCI), a protein called amyloid gathers in the brain before the symptoms of memory loss and confusion become progressive. Scientists have shown that amyloid accumulation in the brain triggers a special type of brain inflammation. The brain inflammation can either help fight off the amyloid, or, as Emory neuroscientist Dr. David Weinshenker and colleagues have shown in animal studies, when levels of another brain chemical called norepinephrine (NE) are too low, the inflammation can injure brain cells and cause progressive degeneration.

Preclinical animal models of AD have shown that not only does loss of NE cause inflammation and neuronal damage similar to that seen in humans with AD, but importantly, in these same studies, restoring the NE reverses these effects and slows the neuronal damage. These findings raise the possibility that drugs that increases NE levels may be used in MCI to reduce pro-inflammatory biomarkers and delay the onset of neuronal damage.

The new Emory study will test the ability of atomoxetine, a NE transporter blocker, to reduce biomarkers of inflammation in MCI. Atomoxetine is an FDA-approved drug that is already widely used in both children and adults to treat attention deficit disorder. In this study, atomoxetine is being tested to see if it may be useful in treating the brain inflammation that occurs in AD. Atomoxetine increases the levels of NE in the brain and it is hoped that increasing NE will improve removal of amyloid, reduce the inflammation that causes injury, and slow down the progression of disease.

The primary goal of this study is to provide evidence that treatment with atomoxetine changes NE markers and reduces levels of pro-inflammatory biomarkers in cerebrospinal fluid. Other goals of the study will be to confirm the safety and tolerability of atomoxetine in MCI and to explore whether atomoxetine improves cognitive or behavioral functioning. Since MCI coincides with the onset of brain atrophy, this early stage of impairment may offer a critical window of time to initiate novel therapies aimed at the events that lead to progressive neurodegeneration. The results of this study will provide a foundation for future clinical trials to slow disease progression.
Big Brain Academy for Wii by Nintendo
Reviewed By: Carolyn Clevenger

This fun, interactive game comes from the same creator as the Brain Age (also Nintendo, exclusively for the handheld DS). Thus, there are many similarities. Big Brain Academy also creates an account for each user and gathers baseline data on the player's cognitive performance. Games and difficulty levels are then selected based on that baseline ability.

Unlike Brain Age for the handheld DS machine, though, Big Brain Academy uses a Mii (sounds like "me")—a player-created avatar. Also, Big Brain Academy has a much more interactive platform—as many as 8 players can compete using just one Wii-mote (the Wii version of "remote"). Finally, Big Brain Academy can be viewed on a big screen TV using a remote control so that it does not require high visual acuity or fine motor dexterity.

Our colleagues at Georgia Tech conducted a study of 78 adults, ages 50-71, to determine whether Big Brain Academy for Wii led to increased cognitive abilities. Unfortunately, while participants increased their skills and abilities in the Wii game, there was no evidence that the game-based skills were applied to their overall cognitive and perceptual abilities.

Pros: Fun, interactive game that allows competition among friends and family. This is especially important if you have already established a champion in Wii bowling

Cons: Skills gained while playing Big Brain Academy do not appear to translate into cognitive performance using standardized tests.

The Emory Alzheimer's Disease Research Center, the Emory Center for Health and Aging and the Registry for Remembrance will offer a Community Forum: “Diets, Documents and Disordered Thinking”. This community forum will discuss how diet and disease impact health and memory as well as the importance of establishing legal documents for senior adults. Community Forums are held to create awareness of health promotion and education about memory preservation for long term lifestyle benefits.

This Community Forum will be held Monday, April 30, 2012 from 9:30 am to 12:00 noon at The Carter Center Cyprus Room, 453 Freedom Parkway, Atlanta, GA 30307-1406. There is no charge for this event however space is limited. Please register by email to r4rcommforum@gmail.com before April 25, 2012. If you have questions please call 404-728-4777.

Friday, April 27, 2012 AFTD will hold their Education Conference and Annual Meeting in Atlanta, GA at the Westin Buckhead Hotel from 11:30 – 6:00 (followed by a reception). The mission of AFTD is to reach a time “… where frontotemporal degeneration is understood, effectively diagnosed, treated, cured and ultimately prevented.”

AFTD is pleased to be able to offer this program free to all attendees. CEUS will be available for professional attendees. For conference details and online registration go to: http://www.theaftd.org/ or call 267.514.7221.

Emory’s ADRC and ALS centers are partnering with AFTD to offer this informative day of support and connection for families facing FTD. Highlights include: an update on medical research by Dr. William Hu, assistant professor of neurology at Emory, and a Keynote Address by Tim Langmaid, senior medical editor at CNN. There will be: breakouts focusing on different stages of the FTD journey; a brief session geared specifically for persons diagnosed with FTD; and an opportunity to get involved with regional advocacy.

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Think about the basic questions we’d like to answer about Alzheimer’s disease. What does the disease look like just as it is beginning in the brain? Scientists suspect that identifiable changes to the brain take place well before AD symptoms appear. Are there signs to look for that might signal the disease is starting? What changes in the brain and nervous system as the disease progresses? Identifying the symptoms at their earliest possible stage will increase the likelihood that emerging new therapies will have an impact on diagnosis and progression of the disease.

For the past eight years, the Alzheimer’s Disease Neuroimaging Initiative (ADNI) has been working to answer these and other important questions about the disease. Over this time, ADNI has recruited healthy older volunteers without problems with memory loss, persons who are exhibiting very early signs of memory impairment (Mild Cognitive Impairment), and persons with diagnoses of Alzheimer’s disease into a project in which they undergo testing every 6-12 months. These volunteers provide a variety of information. They are scanned, using Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET), to examine glucose metabolism and amyloid accumulation in the brain. These brain scans are showing scientists how the brain’s structure and function change as AD starts and progresses. All volunteers regularly provide blood samples; many provide samples of spinal fluid (via lumbar puncture – spinal tap). These samples are used to see if they might reveal ways to predict or monitor the progression of the disease. These “biomarkers” are helping scientists to examine changes that could identify which patients with mild memory impairment will develop Alzheimer’s. So far, more than 800 participants at 55 academic medical centers across the United States and Canada have been enrolled in the study.

Michael Weiner, MD, from the University of California, San Francisco, directs the national study. At Emory, Allan Levey MD, PhD Chairman of the Department of Neurology and Director of the Alzheimer’s Disease Research Center is the lead investigator.

The amount of new exciting information produced by ADNI has been enormous. For example, information from ADNI has resulted in over 300 scientific papers. ADNI methods are being used by pharmaceutical companies in their clinical studies of new drugs, and the results of ADNI are being used by academic labs and industry to test new treatments for Alzheimer’s and to design future treatment studies. Similar studies are borrowing ADNI’s methods to conduct studies in Europe and China. Recently a similar biomarker study, the Parkinson’s Progression Markers Initiative, was initiated for individuals with a diagnosis of Parkinson’s disease.

Information from: http://www.adcs.org/Studies/ImagineADNI2.aspx

Memory training improves memory for locations and increases brain activity in people with MCI

These findings are published in the journal Hippocampus and were funded by grants from the National Institute on Aging and the Department of Veterans Affairs.

Forget where you put your keys? Misplace your glasses? Blame your hippocampus. The hippocampus – that’s Greek for “seahorse” which is what this small part of the brain looks like – plays a critical role in forming new memories. Problems in the hippocampus may cause the memory problems we associate with Mild Cognitive Impairment (MCI) and Alzheimer’s disease.

New research at the Emory ADRC and the Atlanta Veterans Affairs Medical Center suggests that memory strategy training can help and even improve functioning of the hippocampus. Dr. Benjamin Hampstead and colleagues study healthy older adults and patients with Mild Cognitive Impairment (MCI) who are in a memory strategy training program or a control group. These volunteers undergo magnetic resonance imaging (MRI) scans at the start of the study, completed three training sessions, and then another MRI. Participants in the memory strategy training remembered significantly more than those in the control group. Although MCI patients showed less hippocampal activity than healthy controls at the start of the study, memory strategy training partially restored some of this activity.

Dr. Hampstead and his colleagues, Drs. Krish Sathian and Anthony Stringer, are also examining the duration of these improvements and whether people can apply the strategies on their own. Individuals interested in learning more or taking part in this line of research can contact Casey Bowden at 404-712-4321.
This spring, we invite you to join us in viewing some spectacular works of art, enjoying interesting discussions, and sharing insightful experiences at our new program, Museum Moments at the Emory University Michael C. Carlos Museum.

*Museum Moments* is a unique program for individuals with mild cognitive impairment, Alzheimer’s disease and/or dementia and their care partners, presenting interactive tours of the museum collection that are specifically designed to invite conversation, spark the imagination, and encourage connections through art. It represents an exciting collaboration between the Emory ADRC, the Carlos Museum, and New York’s Museum of Modern Art (MoMA).

When I began medical school at Emory, I hoped to create an art museum program for individuals with Alzheimer’s here in Atlanta similar to those I had developed in Boston and London. Drs. Ken Hepburn, Allan Levey and James Lah at the ADRC responded with resounding support and enthusiasm; likewise, Julie Green and Nina West of the Carlos Museum embraced the concept completely. After learning of our endeavors, MoMA also offered us their knowledge and expertise on establishing a museum program. I could not have been more excited by this amazing collaboration between wonderful people, experts, and institutions! Together, we have created *Museum Moments*, a new and unique museum program for the Atlanta community.

All of our *Museum Moments* tours are guided by highly experienced and specially trained docents of the Carlos Museum. The docents have undergone rigorous training and participated in multiple workshops to better understand not only how Alzheimer’s disease and dementia can affect individuals and their care partners, but also how to engage participants in friendly, open conversations and facilitate supportive, interactive discussions about art. In fact, they completed a special training session by MoMA’s team from New York just last month.

We hope you will join us on our upcoming tours on April 25th, May 16th and June 20th. We believe that through engagement with art, both participants and their care partners have the opportunity to exchange thoughts and ideas, enjoy great interpretive freedom, gain insights into others’ ideas and interests, share individual experiences, and access memories in a social setting that welcomes interaction and connection with others.

To register call ADRC staff member Johnathan at 404-728-4771 or send an email to Johnathan.huh@emory.edu.

Editors Note: Visit http://med.emory.edu/ADRC/ for more information on *Museum Moments* and Emily Lu, 4th year Medical Student.
<table>
<thead>
<tr>
<th>Research Study</th>
<th>Eligibility</th>
<th>Contact Person</th>
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</table>
| **Atomoxetine Clinical Trial:** for people with Mild Cognitive Impairment | Diagnosis of Mild Cognitive Impairment  
Stable on Medications for 3 months  
Study partner who can attend all visits | Deborah Stout  
404-728-6590  
dstout@emory.edu |
| **Honor Research Registry:** Longitudinal study of changes in memory and other cognitive skills | Aging people with no memory problems  
People of any age with mild cognitive impairment, Alzheimer’s disease or other forms of dementia  
Willing to participate in additional research studies  
Study partner available to participate in visits | Marie Walters  
404-728-6950  
mccwalte@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  
People of any age with mild cognitive impairment, Alzheimer’s disease or other forms of dementia  
Study partner available to participate in visits | LaShonda Strozier  
404-728-6395  
lstrozi@emory.edu |
| **Alzheimer’s Disease Neuroimaging Initiative – 2 (ADNI-2)** | Age 55 – 90 with no memory problems or mild cognitive impairment or mild Alzheimer’s  
Study partner available for all study visits  
Willing to do imaging & lumbar puncture | Lavezza Zanders  
404-728-6392  
lzander@emory.edu |
| **Nerve Growth Factor: Gene Therapy Surgical Intervention Trial** | Diagnosis of *mild to moderate* Alzheimer’s disease  
Stable on Alzheimer’s Medications for three months  
Study partner who can attend all study visits | Julie Kozarsky  
404-728-6589  
jkozars@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 sessions  
Able to commit to come to all training sessions | Noah Duncan  
404-728-6544  
nduncan@emory.edu |
| **Cognitive Rehabilitation of Memory in Mild Cognitive Impairment** | Diagnosis of mild cognitive impairment  
Willing to undergo functional MRI | Casey Bowden  
404-712-4321  
ebowden@emory.edu  
Justin Hartley  
404-712-0936  
Jhartl3@emory.edu |
| **Cognitive Aging Project:** For women with and without memory problems | Women over age 60  
Willing to undergo MRI & annual cognitive tests | CeeCee Manzanares  
404-727-9324  
cmanzan@emory.edu |
| **Caregiver Study** | For people of African American heritage  
For Caregivers of a loved one with Alzheimer’s  
Willing to participate in a group | Monica Parker, MD  
404-727-8481 |
Please make checks payable to: Emory Alzheimer’s Disease Research Center

Emory University Health Sciences Development

c/o Emory Alzheimer’s Disease Research Center

1440 Clifton Road, Suite 112

Atlanta, Georgia 30322
To register for a class...  
Call Susan Peterson-Hazan at 404-728-6273 at least one week prior to the beginning of each class.

<table>
<thead>
<tr>
<th>Class</th>
<th>2011 Schedule</th>
<th>Location</th>
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<tbody>
<tr>
<td>Savvy Caregiver Program</td>
<td>A 6 Week class that meets: Fridays: 11:00 – 1:00</td>
<td>Wesley Woods Health Center</td>
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<tr>
<td></td>
<td>April 6 – May 11</td>
<td>3rd Floor Conference Room</td>
</tr>
<tr>
<td>Early Memory Loss Group (Co-sponsored by the Alzheimer’s Association, Georgia Chapter)</td>
<td>An 8 Week class that meets: Fridays: 11:00 – 12:30</td>
<td>1841 Clifton Rd, NE, Atlanta, GA 30329</td>
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<td></td>
<td>September 7 – October 26</td>
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<tr>
<td>Frontotemporal Dementia Caregiver Support Group</td>
<td>2nd Tuesday of every month 6:30 – 8:00</td>
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