Cognitive Rehabilitation: Retraining the Brain

Mild Cognitive Impairment (MCI) is an official diagnostic category that signifies significantly reduced cognitive functioning compared to one’s past abilities. MCI often precedes the development of AD. Difficulty learning and remembering new information is a characteristic feature of AD and MCI and eventually contributes to these patients becoming increasingly more dependent on others. This loss of independence can be especially distressing to both patients and their family members.

Researchers at the Emory University Alzheimer’s Disease Research Center and the Atlanta VA are investigating the use of cognitive rehabilitation as a way of helping maximize learning and memory in patients who have been diagnosed with MCI. Cognitive rehabilitation is a general label for interventions that can be used to improve functioning in “thinking” abilities such as learning and memory. Dr. Benjamin Hampstead, the neuropsychologist leading these studies, says, “An especially unique aspect of this research is our use of functional magnetic resonance imaging (fMRI), which allows us to examine changes in brain activity that result from cognitive rehabilitation.” In fact, Hampstead and his colleagues, Dr. Krish Sathian and Dr. Anthony Stringer, are the first to combine cognitive rehabilitation and fMRI in patients with MCI.

To date, this research team has examined the effectiveness of this approach by asking patients to learn and remember faces and names as well as objects and their locations. Overall, cognitive rehabilitation has significantly improved patients’ memory for both types of information and, importantly, the benefits persist for at least 1 month after training. Excitingly, patients are showing increased brain activity in regions that play a role in learning and memory and that are known to be abnormal in MCI and Alzheimer’s disease. Using this information, Hampstead hopes to “identify key brain regions that are functioning well and then develop or modify cognitive rehabilitation strategies that will utilize those regions. Conversely, we also want to find strategies that allow patients to work around areas that are impaired.” Interestingly, the amount of improvement seems to be related to disease severity; a finding that suggests earlier intervention may be critical for prolonging functioning.

An ongoing study is comparing the pattern of change in patients with MCI to those of healthy elderly individuals and will provide additional insight into how the brain changes as a result of Alzheimer’s disease as well as the types of strategies that are most effective in each group. Hampstead emphasizes, “Although there is no cure for Alzheimer’s disease, we hope to improve our patients’ quality of life and help them maintain their independence for as long as possible.”

If you have been diagnosed with MCI or are having no more than normal age-related memory problems (“healthy elderly”) and would like to take part in this research, please contact Stephanie Tucker (srtucke@emory.edu) or Pamela Phillips (paphill@emory.edu) via email or telephone (404-712-0936).
State-of-the-Art Imaging Center at Emory

In September, Emory took possession of a new, state-of-the-art imaging machine that allows clinicians and researchers to collect two kinds of images at once: this scanner is one of only four in the world. The new machine, a combined MR/PET (magnetic resonance/positron emission tomography) scanner, is good for patients and for the professionals who use it. One great advantage is the convenience for both patients and investigators. Because it can capture two kinds of brain images simultaneously, it offers a shorter procedure time, something that might be particularly important for patients with Alzheimer’s disease who may not be able to tolerate being in scanners for a long time. It is helpful to clinicians and researchers because the MR/PET captures images that can be easily merged and interpreted. Another great advantage is that the two images will capture two different views of what is going on in the brain at exactly the same time, something we believe will lead to a more sensitive understanding of what is happening to a brain affected with Alzheimer’s.

The PET head is a self-contained PET scanner that fits inside the tunnel of a standard 3T clinical MRI scanner. Great effort had to be expended to develop electronics that can operate in the high magnetic field environment. The picture below shows the scanner, now at the second floor of the Wesley Woods campus of the Center for Systems Imaging (CSI), one floor below the ADRC research clinic.

MR and PET scientists at CSI will be exploring the limits of this new device in the months to come. They have plans to use the total information collected to improve the images from the two separate elements (MR and PET). They expect that the images derived from the combined device will be superior to ones collected on stand-alone scanners. For more information, please contact Orman Simpson at the Center of Systems Imaging.

Ken Hepburn, PhD is the leader of Emory ADRC Education Core and co-author of The Savvy Caregiver Program

Reasonable Goals for Savvy Caregivers

Savvy caregivers need to step outside their situations at least long enough to figure out what they ought to expect and how to gauge their own performance. They need to grade how well they’re doing as caregivers and how well they’re doing in preserving the care recipient’s most precious resource – themselves.

So how good are you as a caregiver? Consider what’s a realistic goal for what you’re doing. Caregiving – like the disease itself – is in the here-and-now, not in the past or in the future. Restoring the person to previous function isn’t possible, nor is stopping the decline that the disease has begun. So the only reasonable goal is to work with the person to make each day as pleasant and engaging as possible – to see to it that, for as many activities as possible, the person is zeroed in or focused on doing something s/he seems to enjoy doing.

It’s useful to keep in mind that every activity is an opportunity for pleasant engagement. The day doesn’t have to be full of “big events.” Getting dressed, helping to dry dishes, or taking a walk all present chances to help the person to be happy in the present moment. As a caregiver, you know the kind of pace and level of complexity of activity that the person can handle. Keeping yourself to that pace and being sure that what you’re asking the person to do fits with what he or she can manage are two important savvy caregiving skills.

In all of this, you have to take care of yourself. There are many things that can help with that – particularly getting help from family and friends. But one thing that is important is to be very forgiving of yourself. No one can be perfect; no one can keep the care recipient happy and engaged all the time. So learn, as you look back at each day, to take pride in the successes you’ve had – and also to figure out what you did to create those successes.

Combined MR/PET scanner, located on the second floor of Wesley Woods Health Center (one floor below the ADRC research clinic).
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<tr>
<th>Research Study</th>
<th>Eligibility</th>
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<tr>
<td><strong>Honor Research Registry</strong></td>
<td>• Aging people over 65 with no memory problems&lt;br&gt;• People of any age with mild cognitive impairment, Alzheimer’s disease or other forms of dementia&lt;br&gt;• Interested in participating in additional research studies at the Emory ADRC&lt;br&gt;• Study partner available to participate in visits</td>
<td>Katelyn Perkins&lt;br&gt;404-728-6950&lt;br&gt;<a href="mailto:kgperki@emory.edu">kgperki@emory.edu</a></td>
</tr>
<tr>
<td><strong>Registry for Remembrance</strong></td>
<td>• Ethnic persons with African Ancestry&lt;br&gt;• Aging people over 60 with no memory problems or people of any age with mild memory problems or Alzheimer’s disease&lt;br&gt;• Study partner available to participate in visits</td>
<td>LaShonda Strozier&lt;br&gt;404-728-6395&lt;br&gt;<a href="mailto:lstrozi@emory.edu">lstrozi@emory.edu</a></td>
</tr>
<tr>
<td><strong>Vaccine Trials</strong></td>
<td>• Diagnosis of mild to moderate Alzheimer's disease&lt;br&gt;• Age 50 and older&lt;br&gt;• Stable on medications for Alzheimer’s for three months&lt;br&gt;• Study partner available to accompany to all visits</td>
<td>Deborah Stout&lt;br&gt;404-728-6590&lt;br&gt;<a href="mailto:dstout@emory.edu">dstout@emory.edu</a></td>
</tr>
<tr>
<td><strong>Concert (Dimebon) Study</strong></td>
<td>• Diagnosis of mild to moderate Alzheimer's disease&lt;br&gt;• Age 50 and older&lt;br&gt;• Stable on medications&lt;br&gt;• Aricept is allowed</td>
<td>Andrea Kippels&lt;br&gt;404-728-6443&lt;br&gt;<a href="mailto:ajkippe@emory.edu">ajkippe@emory.edu</a></td>
</tr>
<tr>
<td><strong>Lewy Body Disease</strong></td>
<td>• Diagnosis of Lewy Body Dementia&lt;br&gt;• Stable on medications&lt;br&gt;• Willing to spend 48 hours in a sleep research lab</td>
<td>Donald Bliwise, Ph.D.&lt;br&gt;404-728-4751</td>
</tr>
<tr>
<td><strong>Memory Rehabilitation Intervention</strong> in Amnestic Mild Cognitive Impairment</td>
<td>• Diagnosed with amnestic mild cognitive impairment&lt;br&gt;• Study partner who can attend all cognitive rehabilitation sessions&lt;br&gt;• Lives within 45-driving minutes of Wesley Woods Health Center at Emory University and/or will commit to come to all training sessions</td>
<td>Noah Duncan&lt;br&gt;404-728-6544&lt;br&gt;<a href="mailto:nduncan@emory.edu">nduncan@emory.edu</a></td>
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<tr>
<td><strong>Cognitive Rehabilitation of Memory in Mild Cognitive Impairment</strong></td>
<td>• Diagnosed with amnestic (single or multi-domain) mild cognitive impairment&lt;br&gt;• Diagnosed as healthy control&lt;br&gt;• Age 55 &amp; older&lt;br&gt;• Willing to undergo functional MRI</td>
<td>Stephanie Tucker, MPH&lt;br&gt;404-712-0936&lt;br&gt;<a href="mailto:srtucke@emory.edu">srtucke@emory.edu</a></td>
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Donations, January-June 2009

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Contributions: If you would like to make a contribution to support the Alzheimer’s Disease Research Center

Enclosed is my tax deductible gift of $____________. Please note that this contribution is:

☐ In Memory of:  ☐ In Honor of:  ________________________________

Please send acknowledgement of this donation to:
Name: ___________________________________________  
Address: _________________________________________  
City: _________________ State: ______ Zip: ___________

Please make checks payable to:
Emory Alzheimer’s Disease Research Center  
c/o Emory Univ. Health Sciences Development  
1440 Clifton Road, Suite 112  
Atlanta, Georgia  30322
Success of Clinical Trials Depends on People with Mild Alzheimer’s Disease

Many new medications are under development for Alzheimer's disease. However, before any new medication can be approved by the U.S. Food and Drug Administration (FDA) and prescribed by a physician, it must be tested and found to be safe and effective in a clinical trial. These trials often enroll people in the early to middle stage of Alzheimer’s disease.

Mild (early) Alzheimer’s disease is the phase where someone is having mild memory problems that may affect their ability to remember appointments, take medications on time, or pay bills and balance their checkbook. By the moderate (middle) stage of Alzheimer’s, they may need more reminders or assistance with activities such as bathing or remembering to change their clothes regularly.

One screening tool that is used to identify disease stages is the mini-mental status exam (MMSE). This 30 point questionnaire is used by many physicians when they evaluate someone with Alzheimer’s disease. It is also used in many clinical trials to screen potential enrollees. An individual with an MMSE score above 20 is usually in the mild stage of Alzheimer’s, while someone between 10 and 20 is in the moderate stage of the disease. Many Alzheimer’s clinical trials require an MMSE score of 16 or higher to enroll in a study.

“There are other criteria in addition to the MMSE score” according to Deborah Stout, RN, Alzheimer’s study coordinator at Emory. “But one of the saddest parts of my job is telling someone (and their family) that their MMSE score is too low for them to be enrolled in a study” said Stout. “If I could give any suggestion it would be to consider enrolling in a study when symptoms are mild. Don’t wait until the person is having problems in daily living to enroll in a clinical trial. The goal of research is to test medicines in hopes that they will help people continue to function at a high level.”

Participants in Alzheimer’s clinical trials need to be stable on current medications. Most studies allow people to continue on their current medications for Alzheimer’s disease. However, each study has different criteria related to medications. The study coordinator will review these with you so you can make an informed decision about participation.

The clinical trials underway now will lead to the next generation of Alzheimer’s treatments according to Allan Levey, MD, PhD, Chair, Department of Neurology at Emory, and Director of the Emory Alzheimer’s Disease Research Center. “Current medications for Alzheimer’s (Aricept, Razadyne, Exelon & Namenda) primarily treat symptoms. Clinical trials enrolling now or in the near future, such as vaccine trials, Dimebon study, nerve growth factor gene therapy trial, may slow the progression of the disease. We want to find treatments that halt the progression of the disease and that can be started at the earliest sign of memory loss,” according to Levey.

Learn More
Contact the Emory ADRC at 404-728-6950 or email speter2@emory.edu for information on clinical trials. Additional clinical trial information is available at nia.nih.gov/Alzheimers/.
WE’RE ON THE MOVE TO END ALZHEIMER’S

For registration, dates and locations for a Memory Walk near you please visit www.georgiamemorywalk.org.

There are currently more than 200,000 Georgians living with the disease.

Emory ADRC Team will walk on October 17th in the Atlanta area event, beginning and ending at Zoo Atlanta. You can donate or join our team at www.georgiamemorywalk.org
The Spring community event was jointly hosted by Emory ADRC, Home Box Office (HBO) Documentary Films and the Alzheimer’s Association. It was held on May 1, 2009 at the Emory Conference Center. Attendees screened the HBO Documentary, “Momentum in Science” one of the four-part series on Alzheimer’s disease released this spring. The film was followed by two panel discussions for caregivers and health professionals. Pictured above (left to right): Janet, Walley, Larry Tune, Suzette Bimford, Allen Levey, Monica Parker, Pat Conner, Carolyn Cleveinger, and Ken Hepburn.

The next community education event is a panel discussion entitled, “Toolkit for Healthy Caregiving”. Panelists have a range of professional experience in elder law, as support group leaders and healthcare providers. The event will be held on November 5th at the Helene Mills Senior Center, 515 John Wesley Dobbs Avenue. The event is free and open to the public. It begins at 6:30pm.

Investigational Treatment for Alzheimer’s Disease Ready to Enroll Patients

Emory ADRC will soon begin enrolling patients with Alzheimer’s disease in the CONCERT study, a new clinical trial that will test the efficacy of a unique investigational drug, dimebon in patients currently taking Aricept.

Alzheimer’s is a complex disease and while current medications address symptoms for some patients, the disease often requires combination therapy to maximize clinical benefit. Dimebon is thought to work differently than current medications and this study will evaluate whether adding it to one of the most commonly used Alzheimer’s medications will provide more effective symptomatic treatment to patients.

In preclinical studies, dimebon has been shown to protect brain cells from damage and enhance brain cell survival, potentially by stabilizing and improving mitochondrial function. Mitochondria are critical to brain cell functioning as the primary source of energy for cells. Drugs that protect mitochondria or restore their function could potentially be a valuable treatment approach in AD.

While a cure for AD is still years away, treatments that provide lasting effects, more complete symptomatic benefits or slow disease progression would be meaningful advances for patients and caregivers; there is an urgent need for patients to participate in clinical trials to help advance the understanding of how Alzheimer’s disease can be better treated.

For more information on eligibility and enrollment, patients and caregivers can call Study Coordinator, Andrea Kippels, at 404-728-6443 or the CONCERT study hotline toll-free at 1-877-888-6386, or visit http://med.emory.edu/ADRC/ or www.concertstudy.com.
### Upcoming Events

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<tr>
<td><strong>Early Memory Loss Group</strong> (Co-sponsored by the Alzheimer’s Association, Georgia Chapter)</td>
<td>An 8 Week class that meets: Fridays: 10:30 – 12:00 February 5th – March 26th, 2010</td>
<td>All Classes will be held at: Wesley Woods Health Center 3rd Floor Conference Room 1841 Clifton Rd, NE, Atlanta, GA 30329</td>
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<tr>
<td><strong>Caregiver Challenges: Everything You Want to Know About the Middle Stage of Alzheimer’s disease</strong> (Sponsored in part by a grant from the Wesley Woods Foundation)</td>
<td>A 6 Week class that meets: Fridays: 10:30 – 12:00 November 6th – December 18th, 2009</td>
<td>To register for a class call Susan Peterson-Hazan at 404-728-6273 at least one week prior to the beginning of each class.</td>
</tr>
<tr>
<td><strong>Late Stage Alzheimer’s Disease</strong> (Sponsored in part by a grant from the Wesley Woods Foundation)</td>
<td>A 4 Week class that meets: Fridays: 10:30 – 12:00 January 8th – 29th, 2010</td>
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### Upcoming Event: “Toolkit for Healthy Caregiving” Panel Discussion

**Location:**

**Helene Mills Senior Center**

515 John Wesley Dobbs Ave

**Co-sponsored by**

[Alzheimer’s Association](https://www.alz.org)