

Mind Matters

Alzheimer's Disease Center
Center for Cognitive Neurology

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Section 1: What Exactly Is Normal, Age-Related Memory Loss? And What Can I DO to Maximize My Memory? *By Julia Rao, PhD*

As we age, our brain does too! In fact, total brain volume peaks in early adulthood and then loses about 2% of its volume per decade between the ages of 20 and 90. This loss in volume, or atrophy, is due to a decrease in the size of the brain cells, or neurons, and their connections with each other. This results in normal age-related cognitive change and leads to a slower rate of processing new information, less efficient “working memory” (multitasking and blocking out distractions), decreased attention to detail, and less efficient retrieval of words and names. While these cognitive changes are normal, there are things we can do to limit the effect they have on our everyday life, including, but not limited to:

- **Do Aerobic Exercise.** Aerobic exercise has been shown to promote neurogenesis (new neuron growth) in the hippocampus, the memory center of the brain. Older adults should strive for 150 minutes of moderate-intensity aerobic activity a week. Strength training, too, is beneficial—for weight loss, to help reduce falls, to relieve arthritic pain, and to improve cardiac health.
- **Limit Stress.** Stress can interfere with your attention (it’s difficult to pay attention when you mind is focused on something else), and it is not uncommon to become forgetful when you are not able to devote your full mental energy to a task.
- **Maintain a Healthy Diet.** The “Mediterranean diet” has been shown to reduce the risk of developing mild cognitive impairment (MCI) as well as conversion from MCI to Alzheimer’s disease (AD). It consists mainly of vegetables (the brighter the better!), fish, beans and nuts, fruits, whole grains, unsaturated fats (e.g., olive oil), and regular but moderate intake of alcohol.
- **Get Enough Sleep.** Poor sleep can lead to attention and memory lapses and impaired problem solving. Maintaining proper sleep hygiene (limiting naps, having a consistent sleep schedule, avoiding stimulants at nighttime, etc.) is essential for brain health.
- **Use It or Lose It!** While there is no specific cognitive training activity that has been shown to enhance memory, we do know that staying active and engaged in mentally stimulating activities can help to stave off further decline. Finding something that is enjoyable, yet challenging, is important to maintaining brain health. This also applies to those with MCI/AD. Research has also shown that cognitive training focused on strategies for compensation can have a marked impact on the effect of cognitive change in the everyday lives of older adults with mild memory loss. Because of this, the Barlow Center’s Cognitive Skills Training Program is pleased to offer a new group beginning this spring.

Cognitive Skills Training Program: For Individuals with Mild Cognitive Impairment

The Barlow Center’s Cognitive Skills Training Group is designed for those who have begun to show symptoms of mild memory loss and are seeking to learn ways to reduce the impact of memory loss on their everyday functioning. Goals of the course include:

1. Educating group members about how memory changes as we age.
2. Identifying factors that can influence memory, such as lifestyle factors and disease.
3. Providing strategies to compensate for memory loss and to reduce common memory errors.

When: Mondays, 4 pm - 5 pm

Where: Pearl I. Barlow Center, 145 East 32nd Street; 2nd Floor

Prerequisite: Neuropsychological evaluation within the past year. Participants who require an updated evaluation will be scheduled for the next available appointment.

If interested, please contact: Julia Rao, PhD, neuropsychologist at 646-754-2265 or julia.rao@nyulangone.org

Section 2: Exercise, Express, EXERT Yourself!



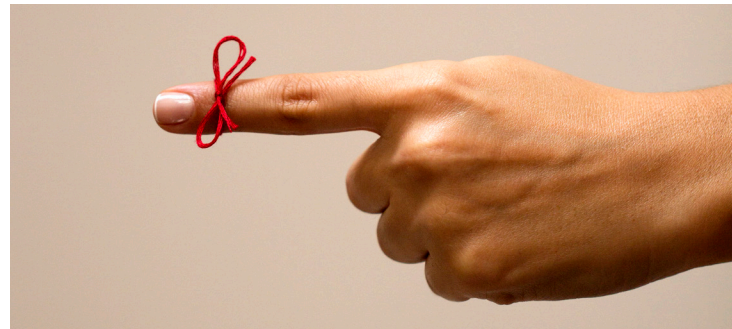
Have you ever wondered whether any of those studies pushing you to exercise might have an impact on your mind and not just your muscle? Would dusting off your sneakers and moving your body, Jane Fonda style, really help to boost your memory?

If you are ready to take the challenge and EXERT yourself, you may be eligible to be part of a multisite clinical study to help determine the benefits of exercise to brain function and, more specifically, to see whether exercise can help older adults beat some of the risks associated with memory loss. In a clinical trial offered here at NYU Langone known as the EXERT study, funded by the National Institute on Aging, researchers want to test that theory and find out whether there is a direct correlation between exercise and memory loss.

The EXERT clinical trial will take place over 18 months to determine if physical exercise has an effect on the memory of older adults. Are there therapeutic effects that might impact the progression of memory loss related to the onset of early Alzheimer's disease? Participation in this clinical trial might also uncover how older adults with amnesic mild cognitive impairment respond to exercise. The perks of participation include a gym membership and workouts with a personal trainer, at no cost to you!

Participants will be randomly assigned to one of two exercise treatment groups. They will be asked to complete a noninvasive physical examination and blood collection and undergo cognitive testing and brain imaging here at the Barlow clinic. To be eligible, you must be between the ages of 65 and 89 and experiencing mild memory loss and/or have a diagnosis of mild cognitive impairment. You do not have to have been exercising regularly, but you must be in good health according to your primary care physician. If you are interested in participating, please contact Anasztasia Ulysse • 212-263-0771 • ADclinicaltrials@nyulangone.org.

Section 3: Memory Improvement Through Nicotine By Arjun Masurkar, MD, PhD



The NYU Langone Center for Cognitive Neurology offers multiple clinical trials, many of which are aimed at finding cures for Alzheimer's disease. However, some trials are instead focused on another important endeavor in this field: finding better treatments for the symptoms that accompany aging and aging-associated neurodegenerative disease. One such trial is the Memory Improvement Through Nicotine Dosing (MIND) study, which focuses on symptom treatment in mild cognitive impairment (MCI). People with MCI have some memory or other cognitive difficulties that are worse than expected for normal aging, but not so severe as to be classified as dementia. However, sometimes MCI can progress to dementia, especially when the underlying cause is Alzheimer's disease. The MIND study is particularly relevant because currently there are no symptom treatments specifically approved for MCI.

The MIND study is also intriguing because it tests the ability of a known medication, the nicotine patch, to improve memory in MCI. The nicotine patch is well known as an aid for smoking cessation, but why would nicotine help memory? The brain produces a chemical called acetylcholine that enables brain cells to communicate and form memories and thoughts. Acetylcholine works by activating receptor proteins on brain cells. Nicotine happens to also activate these same receptors, and could thus mimic the enhancing effect of acetylcholine on memory and cognition. While people with dementia do not have enough of these receptors for nicotine to work well, people with MCI possess a sufficient quantity. This sets the stage to test if nicotine, delivered through a skin patch, can help memory in MCI. Indeed, an initial study showed positive results in a small cohort of MCI patients, with no nicotine withdrawal or other serious side effects. With this promising start, the study has now been expanded to a larger scale.

The MIND study originated through a collaboration between Vanderbilt University and the University of Southern California's Alzheimer's Therapeutic Research Institute. It is funded by the National Institute on Aging and the Alzheimer's Drug Discovery Foundation. As the site investigator here at NYU Langone, I am excited that we are one of 30 institutions around the country helping to conduct the trial. We have just begun screening and enrolling patients and are looking forward to involving more participants. For information, contact Shannon Chen • 212-263-5845 • ADclinicaltrials@nyulangone.org.

Section 4: Sleep and Dementia Risk By Ricardo Osorio, MD



With 10% of adults over 65 now suffering from Alzheimer's disease (AD) dementia, and this number projected to double by 2050, understanding the factors responsible for cognitive impairment is of critical importance. Disturbed sleep may be one of these factors. In multiple epidemiological studies, changes in sleep duration and sleep fragmentation, as well as the presence of obstructive sleep apnea (OSA), have been associated with increased risk of cognitive decline, while better sleep consolidation seems to be protective.

The processing of memories occurs throughout sleep. Sleep works to integrate memories in a consolidation process that allows for the long-term storage of the memory and its retrieval during the waking state. During sleep, the brain remains metabolically active with a preservation of cortical connectivity, but a reduction of brain activity and cerebral blood flow occurs with increasing depth of sleep. This allows the brain's neural connections (which have grown stronger during waking hours) to scale back and facilitates the removal of by-products of metabolism that may have accumulated during the day. These sleep-related phenomena apparently keep neural circuits from overloading, consolidate memories, clear the brain of harmful toxins, and reset multiple circadian rhythms, ensuring that humans awaken with brains that are refreshed and ready to tackle new challenges.

Sleep, however, changes dramatically from young to old age. With age it becomes more fragmented, declines in the quantity and quality of deep stages occur, and there is an increase in the prevalence of OSA. Older people also tend to become sleepier in the early evening and wake earlier in the morning than do younger adults. Further, older age is associated with multiple comorbidities and medications that might disrupt sleep. Many older adults, though certainly not all, report being less satisfied with sleep and more tired during the day.

Good sleep quality is beneficial for memory and cognition, but whether these age-related changes in sleep contribute to the changes in cognition commonly observed in older adults, or to

the increased risk for developing AD, is unknown. Recent studies in mice and humans suggest that this could be the case. They demonstrate the importance of sleep in memory consolidation; they also show that amyloid beta (A β) and hyperphosphorylated tau, the two molecules that accumulate in the brain and aggregate into extracellular amyloid plaques and intraneuronal tangles (the trigger and bullet in AD pathogenesis), increase in the interstitial space during periods of higher synaptic activity, and that their clearance from the brain is higher during deep sleep. In addition to its beneficial aspects in reducing stress and improving cardiovascular health and metabolism, sleep could also be a beneficial stage due to both lower production of and increased removal of these toxic metabolic by-products. Improving sleep remains a reasonable recommendation that we can offer to members of the public who strive toward better brain health and successful aging.

Section 5: Prevention of Mild Cognitive Impairment and Eventual Alzheimer's Disease with Medications That Stimulate New Brain Cells in the Memory Region of the Brain By Barry Reisberg, MD



Until recently, it was believed that adult humans and all other vertebrate animals could not produce new brain cells.

A few decades ago, however, it was discovered that when birds sang new songs, a part of the brain got larger and new neurons were found in the birdsong part of the brain. Later, scientists found that rodents such as mice produce new cells in two important brain regions: the olfactory (smelling) region and the hippocampus (memory) region. Yet it was only in 2013 that researchers were able to verify that neurogenesis, the production of new brain cells, definitely occurs in people throughout life, in both the memory region and the olfactory region.

There are medicines, called neurogenesis enhancers, that can stimulate the production of new brain cells. The most important of these are the antidepressants, which are very widely used and considered to be safe. Researchers have found that in addition to stimulating brain cell growth, antidepressant medications decrease brain and cerebrospinal fluid levels of amyloid, the substance that many believe causes Alzheimer's disease (AD). Many normal older people believe that their memory is

decreasing. Studies have shown that those with these complaints are at increased risk of mild cognitive impairment and, eventually, of Alzheimer's disease (AD). We are trying to find out whether we can prevent this decline by treating people with antidepressant medications to stimulate the growth of new brain cells in the brain's memory region and decrease the brain and spinal fluid levels of the amyloid proteins associated with AD.

Therefore, we are conducting a rigorous scientific study in which people will receive one of two antidepressant medications or a placebo (inactive pill). The chances are 2 to 1 that study volunteers will be assigned to an antidepressant medication treatment.

The study includes various clinical and psychological tests, PET scans to measure the brain's energy utilization, and scans to measure the levels of the amyloid protein in the brain. All tests, studies, and medicines will be paid for by foundations that are supporting our efforts to slow and prevent the development of AD in healthy individuals with memory complaints. The amyloid scans will be paid for by General Electric (GE). For further information, please contact Anasztasia Ulysse • 212-263-0771 • ADClinicalTrials@nyulangone.org.

Section 6: Welcoming Our New Core Leaders



Introducing our new Alzheimer's Disease Center Clinical Core Leader, Dr. Arjun V. Masurkar! Dr. Masurkar received a BS from M.I.T. and his MD/PhD from Yale University. He completed his neurology residency and a dementia fellowship at Columbia Presbyterian Medical Center. Dr. Masurkar sees patients in our faculty group practice at the Pearl I. Barlow Center. He also leads a translational research laboratory exploring cellular mechanisms of early Alzheimer's disease, and has been awarded grants from the Alzheimer's Association, Leon Levy Foundation, Blas Frangione Foundation, and the NYU Langone ADC Pilot Study program.



We are also pleased to announce Dr. Arline Faustin's new role as Associate Core Leader of the ADC Neuropathology Core. Dr. Faustin joined the ADC five years ago and has since progressed within the ADC and the NYU Langone Conformational Disorders Laboratory, where she completed a two-year NYU Langone neuropathology fellowship in 2014. She earned an NYU Langone ADC Pilot Study Award in 2015, as well as an NIH Supplement for Neuropathology Fellowship that has continued to support her career development as a promising junior neuropathologist. Please join us in welcoming Dr. Faustin to her new role and congratulating her on her five-year anniversary!

Section 7: Research Opportunities

Clinical studies and trials are the force behind the treatment, cure, and prevention of any disease. Through the volunteerism of patients and others affected by an illness, knowledge is advanced.

Memory Screening and Longitudinal Studies of Aging

Longitudinal Study of Normal Aging, Mild Cognitive Impairment (MCI), and Alzheimer's Disease

PI: Thomas Wisniewski, MD

Participants receive a comprehensive diagnostic evaluation and are reevaluated every year. The goal is to improve early diagnosis and better understand the clinical course and causes of age-related cognitive decline and AD. For information, contact Ashley Clayton • 212-263-3257 • Ashley.Clayton@nyulangone.org

Studies for Those with Mild Cognitive Impairment and/or Alzheimer's Disease

SUVN-502 as Treatment for Subject with Moderate Alzheimer's Disease Currently Treated with Donepezil Hydrochloride and Memantine Hydrochloride (Suven Study)

PI: Martin Sadowski, MD, PhD

This is a phase 2 research trial of an oral investigational medication called SUVN-502 that is meant to test its effect on the symptoms of moderate Alzheimer's disease when given alongside standard treatments of donepezil and memantine (both supplied by the study). The trial is for individuals who are between the ages of 50 and 85 who have been diagnosed with Alzheimer's disease for at least a year. Participation consists of 26 weeks of double-blind (possibility of placebo) treatment and a mandatory caregiver. Please note that participants cannot be taking any Alzheimer's disease medication except for donepezil (Aricept) and memantine (Namenda) during the course of the trial. For information, contact Anasztasia Ulysse 212-263-0771; ADClinicalTrials@nyulangone.org

Therapeutic Effects of Exercise in Adults with Amnesic Mild Cognitive Impairment (EXERT Study)

PI: Martin Sadowski, MD, PhD

EXERT is a national, 18-month-long clinical trial to test whether physical exercise can slow the progression of early Alzheimer's disease-related memory problems or mild cognitive impairment in older adults. Participants must be able to exercise at a participating local YMCA four times per week for 18 months (duration of the study). Participants must also be able to come to the clinic for physical exams, blood collection, cognitive testing, and brain imaging. Eligible adults must be willing to participate in either of the two exercise treatment assignment groups. We are currently enrolling adults between the ages of 65 and 89 who are experiencing mild memory loss or lapses and/or are diagnosed with mild cognitive impairment, have not been regularly exercising, and are in good health otherwise. For information, contact Anasztasia Ulysse 212-263-0771; ADClinicalTrials@nyulangone.org

Long-Term Nicotine Treatment of Mild Cognitive Impairment (MIND Study)

PI: Arjun Masurkar, MD, PhD

Currently enrolling.

The Memory Improvement Through Nicotine Dosing (MIND) study will determine whether daily transdermal nicotine will have a positive effect on early memory loss in people diagnosed with MCI. We need your help if you are a healthy, nonsmoking adult age 55+. There is no cost to participate. For information, contact Shannon Chen 212-263-5845, ADClinicalTrials@nyulangone.org

Alzheimer's Disease Neuroimaging Initiative 3 (ADNI3) Protocol

PI: Martin Sadowski, MD, PhD

Currently enrolling. For information, contact Shannon Chen 212-263-5845, ADClinicalTrials@nyulangone.org

Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study to Assess the Safety, Tolerability, and Efficacy of BIIB092 in Subjects with Mild Cognitive Impairment due to Alzheimer's Disease or with Mild Alzheimer's Disease (The Tango Study)

PI: Martin Sadowski, MD, PhD

The TANGO Study is evaluating the safety, dosing, and potential effectiveness of a new investigational drug to see if it has the potential to be a helpful treatment that slows down disease progression in people with mild cognitive impairment due to Alzheimer's disease or mild Alzheimer's disease. The investigational drug is designed to target the tau protein, which is one of the key proteins that build up in the brains of Alzheimer's patients. Researchers believe the investigational drug may help reduce the spread of tau in the brain – potentially slowing the progression of the disease. You may join this study if you are 50 to 80 years of age, have mild cognitive impairment due to Alzheimer's disease or mild Alzheimer's disease, have a study partner and are in general good health. For more information, contact: Anasztasia Ulysse at 212-263-5845 or email: ADClinicalTrials@nyulangone.org

Anti-viral therapy in Alzheimer's disease

PI: Thomas Wisniewski, MD

Anti-viral therapy in Alzheimer's disease is investigating the efficacy of treating patients with mild Alzheimer's disease (AD) with the U.S.A marketed generic antiviral drug valacyclovir. Valacyclovir at 2g to 4g daily, repurposed as an anti-AD drug, is being compared to matching placebo in the treatment of 130 mild AD patients (65 valacyclovir, 65 placebo) who test positive for herpes simplex virus-1 (HSV1) or herpes simplex virus-2 (HSV2). The study is a randomized, double-blind, 18-month Phase II proof of concept trial. This study is funded by the NIH. For information, contact ADClinicalTrials@nyulangone.org

Studies for the Prevention of Cognitive Impairment

A Proof of Concept Study of the Prevention of Mild Cognitive Impairment and Eventual Alzheimer's Disease Using F18 Flutemetamol.

PI: Barry Reisberg, MD

For information, contact Anasztasia Ulysse 212-263-0771; Anasztasia.Ulysse@nyulangone.org

Intramuscular Injection (CAD106) and BACE (-secretase) Inhibitor (CNP520) to Prevent or Delay Onset of Alzheimer's Disease in People Who Are Positive for the APOE4 Gene (Generation Study)

PI: Martin Sadowski, MD, PhD

Currently enrolling. For information, contact Shannon Chen 212-263-5845; ADClinicalTrials@nyulangone.org

A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of CNP520 in Participants at Risk for the Onset of Clinical Symptoms of Alzheimer's Disease (Generation 2)

PI: Martin Sadowski, MD, PhD

Currently enrolling. For information, contact Shannon Chen 212-263-5845, ADClinicalTrials@nyulangone.org

Orexin (Hypocretin) and Tau Pathology in Cognitively Normal Elderly: A New Prevention Strategy for Alzheimer's Disease (TONE Study)

PI: Ricardo Osorio, MD

Our preliminary results suggest that tau pathological changes in the brain stem (years before the onset of clinical symptoms) disrupt the orexinergic system, causing sleep disruption, changes in core body temperature (CBT), and further Alzheimer's disease-type neurodegeneration in a feed-forward cycle. We will test this hypothesis in up to 19 cognitively normal older people by performing a full clinical evaluation, a tau PET-MR scan, two nights of nocturnal polysomnography during which we will measure CBT, and a lumbar puncture to obtain cerebrospinal fluid. We are currently enrolling male and female participants with normal cognition, 55 to 75 years of age, whose total sleep time is between 6 and 8 hours with an absence of moderate to severe obstructive sleep apnea. For information, contact Margo Miller at 212-263-7563; Margo.Miller@nyulangone.org

Sleep, Aging, and Risk for Alzheimer's Disease (SARA 2.0 Study)

PI: Ricardo Osorio, MD

We are currently undertaking a 24- to 30-month longitudinal study of 124 subjects in order to analyze the relationship between two common sleep disorders and AD risk. Age-related sleep changes and common sleep disorders like obstructive sleep apnea (OSA) may increase amyloid burden and represent risk factors for cognitive decline in the elderly. Participants must be able to come to the first visit, which will include a physical exam, cognitive testing, sleep interview, EKG, clinical labs, and blood sample. We will directly interrogate the brain using a two-night nocturnal polysomnography and amyloid deposition using C-PiB PET/MR both at baseline and at a 24-month follow-up. We are currently enrolling men and women living in the New York City area between the ages of 60 and 75 with normal cognition and in good general health, with approximately 50% having mild to moderate OSA. Participants receive results and are compensated for their time. For information, contact Margo Miller at 212-263-7563; Margo.Miller@nyulangone.org

Imaging Studies

Resolving Fine Architectures of Human Gray Matter with Ultra-High-Resolution Diffusion MRI

PI: Yulin Ge, MD

Diffusion MRI (dMRI) is a powerful tool to map the brain's structural organization and connectivity non-invasively. This is used successfully for white matter imaging but has not been widely applied in use for gray matter imaging. This study is working to develop an ultra-high-resolution diffusion MRI (UHR-dMRI) technique on a clinical MRI scanner (i.e., 3T) for improved human gray matter (i.e., hippocampus) microarchitecture characterization. This project will test several novel concepts in 80 subjects to achieve UHR-dMRI on a 3T clinical MRI scanner. You may join this study for volunteering a MRI scan without administration of contrast injection if you are 60 to 85 and are in general good health, have early Alzheimer's disease or amnesic mild cognitive impairment, or you are a healthy volunteer between 20 and 40 years old.

For information, contact: Charlie Morton
212-263-3335 • Charles.Morton@nyulangone.org

Developing Advanced Blood-Brain Barrier Permeability Imaging for Early Alzheimer's Disease

PI: Yulin Ge, MD

An important initiating factor for the development and progression of cognitive impairment is disruption of the blood-brain barrier (BBB), which is important for maintaining normal brain homeostasis and protecting neural tissues from toxins. It is hypothesized that changes to the BBB are known to be common in aging and can be an early process that precedes AD. The purpose of this study is to develop and optimize a new imaging technique called GRASP MRI for people with Alzheimer's disease (AD) to be able to collect more useful imaging data in less time than necessary by current brain MRI methods. This project will test these techniques in 45 subjects with a 3T Gadolinium contrast-enhanced MRI. You may join this study if you are cognitively normal and fall within the range of 20-40 years old or 65-85 years old, or if you have amnesic mild cognitive impairment and are over 65 years old.

For information, contact: Charlie Morton
212-263-3335 • Charles.Morton@nyulangone.org

In Vivo Insights of Small Vessel Changes with Age Using Ultra-Small-Superparamagnetic-Iron-Oxide (USPIO)-Enhanced MRI

PI: Yulin Ge, MD

This proposal seeks to perform an observational study for developing a new imaging tool using an ultra-small-superparamagnetic-iron-oxide (USPIO) contrast agent. The objective is to characterize age-related microvascular changes on both 3T and 7T MRI and better understand the source and basis of brain aging. This study will include 130 total healthy volunteers asked to undergo a single 7T contrast-enhanced MRI. You may join this study if you are healthy and aged 18-85.

For information, contact: Charlie Morton
212-263-3335 • Charles.Morton@nyulangone.org

Mechanisms of Age-Related White Matter Hyperintensities: Insights from Advanced MRI

PI: Yulin Ge, MD

Small vessel disease (SVD) is an age-related diffuse white matter disease associated with white matter hyperintensities (WMHs) seen on brain MRI scans. SVD is a common cause of vascular cognitive impairment in the elderly. In this study, we will characterize the underlying vascular pathophysiological changes of WMHs using non-invasive and multimodal MRI measures and follow them over a period of 2.5 years in an elderly population with diverse WMH burdens. This study will include 160 participants for two visits consisting of a single 1-hour 3T MRI at each visit without administration of contrast agent. You may participate in this study if you are 65-85 years old and have a recent clinical MRI indicating you have white matter lesions present in your brain on the previous MRI.

For information, contact: Charlie Morton
212-263-3335 • Charles.Morton@nyulangone.org

The Next Generation of Vascular Imaging Using Contrast-Enhanced MICRO MRI

PI: Yulin Ge, MD

The purpose of this research study is to assess new magnetic resonance imaging (MRI) methods and a new contrast agent for the evaluation of cerebrovascular diseases (diseases that affect the small blood vessels in the brain). It is hoped that these techniques will enable researchers and clinicians to better detect cerebrovascular diseases. The images collected of the brains of patients with cerebrovascular diseases will be compared to the images from healthy volunteers to see how well the technique and contrast work in detecting cerebrovascular diseases. This study will include 20 subjects willing to complete two 1-hour 3T and 7T MRIs after administration of Ferumoxytol contrast agent. You may participate as a 65-85 year old healthy participant, patient with chronic hypertension, or patient with cerebral amyloid angiopathy. For information, contact: Charlie Morton
212-263-3335 • Charles.Morton@nyulangone.org

New Region-Specific Targeted MRI to Characterize Alzheimer's Disease Pathology

PI: Timothy Shepherd, MD/PhD

Alzheimer's disease is a chronic neurodegenerative condition that may begin in middle age, but current imaging technology fails to detect changes until patient's become symptomatic. Early detection before the onset of symptoms would improve our ability to treat Alzheimer's disease and prevent patients developing cognitive impairment. This study aims to use advanced MRI techniques to characterize specific medial temporal lobe that can be affected in the early stages of Alzheimer's disease pathology, particularly for subjects in the clinically asymptomatic phase of disease. You may join this study if you are 50 to 85 and are in general good health, have early Alzheimer's Disease or amnesic mild cognitive impairment, or you are a healthy volunteer between 20 and 40 years old.

For information, contact: Charlie Morton
212-263-3335 • Charles.Morton@nyulangone.org

Section 8: Contact Info

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If you would like to make a financial contribution, either as a gift or as a tribute to a loved one with a cognitive disorder, you may directly send us your donation. Make your check payable to "NYU School of Medicine" and mail it to:

Alzheimer's Disease Center

c/o Marlena Gordon

NYU Langone Health

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New York, NY 10016

