Women May Keep Verbal Memory Skills Longer than Men in the Early Stages of Alzheimer’s

Women may have a better memory for words than men, despite evidence of similar levels of shrinkage in areas of the brain that show the earliest signs of Alzheimer’s disease, according to a study published in *Neurology* (March 16, 2016 online). The study included participants from the Alzheimer’s Disease Neuroimaging Initiative: 235 people with Alzheimer’s disease, 694 people with mild cognitive impairment that included memory problems, and 379 people with no memory or thinking problems. Researchers compared the groups’ performance on a test of verbal memory to the size of the hippocampal area of the brain, which is responsible for verbal memory and affected in the early stages of Alzheimer’s disease.

Results showed that women performed better than men on the tests of both immediate recall and delayed recall among those showing evidence of minimal to moderate amounts of hippocampal shrinkage. At the high level of hippocampal shrinkage, there was no difference in the scores of men and women. At the score that indicates the start of verbal memory impairment, women showed greater evidence of hippocampal shrinkage.
Patient Enrollment Begins on Largest Brain Amyloid Scanning Study

Participating dementia specialists may now enroll patients to participate in the Imaging Dementia—Evidence for Amyloid Scanning ( IDEAS ) Study at IDEAS-Study.org. The IDEAS Study will follow more than 18,000 Medicare beneficiaries to determine the clinical value of a brain positron emission tomography (PET) scan to detect the hallmark brain amyloid accumulation of Alzheimer’s disease in diagnosing and managing treatment of patients age 65 and older with mild cognitive impairment (MCI) or dementia of uncertain cause. Information from this scan can help exclude underlying Alzheimer’s disease, and may help guide patient management.

To apply for participation, visit www.IDEAS-Study.org.

Human Stem Cells Employed to Target Huntington’s Disease

A new approach using stem cells may yield diminished neuron loss, reduced symptoms, and extended life in Huntington’s disease, new research suggests. A team of UC Davis investigators has identified a way to use human mesenchymal stem cells (MSCs) to deliver the key brain protein growth factor that is dramatically diminished by Huntington’s disease.

Investigators designed a system to immunosuppress mice to permit successful testing of MSCs as a delivery system for brain-derived neurotrophic factor (BDNF), a growth factor showing great promise for treating Huntington’s disease. They injected those cells directly into the brains of mouse models of Huntington’s, which were bred with a genetic mutation that closely mimics Huntington’s disease in people. Following implantation, the mice were tested weekly for six weeks to detect behavioral changes. Treated mice exhibited significantly reduced anxiety compared with mice given placebo. The researchers also found that mice injected with the BDNF-producing MSCs had less degeneration of the striatum compared with the mice injected with placebo. Additionally, there was some evidence of significantly increased neuron growth activity in mice that received MSCs, compared with control mice. In addition, mice that received BDNF-producing MSCs had up to a 15-percent increased lifespan as compared to the control group. The study was conducted as part of a five-year, multimillion dollar grant from the California Institute for Regenerative Medicine (CIRM) to develop a cellular therapy for Huntington’s disease. An observational study, PRE-CELL, is already underway with Huntington’s disease patients to measure their rate of disease progression, using periodic neurological testing, magnetic resonance imaging and testing of biomarkers in the blood and cerebrospinal fluid. The data were published in the journal Molecular Therapy and are expected to serve as a baseline for comparison for the same patients in a future planned Phase 1 safety and tolerability trial.

Investigational Cannabidiol Reduces Seizures in Patients with Dravet Syndrome in Phase 3 Trial

GW Pharmaceuticals unveiled positive results from its pivotal Phase 3 study of its investigational cannabidiol medicine Epidiolex for the treatment of Dravet syndrome. Researchers randomized 120 patients to receive either Epidiolex 20mg/kg/day or placebo, with each agent being added to current anti-epileptic drug treatment regimens. The researchers then compared the percentage change in the monthly frequency of convulsive seizures...
During the 14-week treatment period. They found that patients taking Epidiolex achieved a median reduction in monthly convulsive seizures of 39 percent compared with a reduction on placebo of 13 percent. A series of sensitivity analyses of the primary endpoint confirmed the robustness of this result. The investigators also noted that the difference between Epidiolex and placebo emerged during the first month of treatment and was sustained during the entire treatment period.

Epidiolex has both Orphan Drug Designation and Fast Track Designation from the FDA in the treatment of Dravet syndrome, a rare and debilitating type of epilepsy for which there are currently no treatments approved in the US.

InfoRx App from Vivacare Enables Neurologists to Deliver Personalized Patient Education Resources

The new InfoRx mobile app, recently released from Vivacare, enables neurologists to deliver personalized patient handouts, videos, and other educational resources into the hands of their patients and family members. The service is available to US-based neurology professionals at no cost.

Neurologists enroll online for a Vivacare account and create a personalized “Health Library” with patient education resources that can be printed in the office and displayed on the medical practice website. The app makes these resources available on the patient’s own mobile device. Patients with iPhones can go to the App Store to download the InfoRx app and enter a unique code to view their own doctor’s Health Library. Patients can also gain access to prescription medication savings and other features. Additionally, neurologists can distribute a robust collection of advertising-free resources to their patients through the InfoRx app. Neurology resources include handouts and videos covering Alzheimer’s disease, epilepsy, MS, stroke and other neurological conditions. Sources include the Centers for Disease Control and Prevention (CDC), National Institute of Neurological Disorders and Stroke (NINDS), and links to the American Academy of Neurology (AAN). Physician users can control which titles are delivered to their patients and can customize the InfoRx app with their own patient education handouts.

Mobile Stroke Unit with Advanced CT Imaging Capabilities Launched in Tennessee

The University of Tennessee College of Medicine in Memphis recently introduced a comprehensive mobile stroke unit capable of conducting and producing advanced quality imaging for stroke diagnosis and non-invasive CT-angiography with a Siemens Somatom Scope CT scanner.

With extensive CT capabilities available in a mobile setting, physicians can diagnose and launch treatment, including tissue plasminogen activator (tPA) treatment and the potent blood pressure drug nicardipine within the critical first hour timeframe. They can also select patients for endovascular interventions, neurosurgery, and neuro-critical care directly from the pre-hospital arena. The unit also features an internal power source capable of matching regular electrical outlet access, a staff with stroke fellowship-trained, doctorally-prepared nurses certified as advanced neurovascular practitioners, ANVP-BC, and the ability to transport trainees and researchers interested in building the science of early stroke management.
“We have a tremendous burden of stroke in Shelby County, with a stroke rate per 100,000 population that is 37 percent higher than the national average,” said David Stern MD, the Robert Kaplan Executive Dean and Vice-Chancellor for Clinical Affairs for The University of Tennessee College of Medicine and The University of Tennessee Health Science Center. “The goal of the Mobile Stroke Unit is to minimize morbidity and mortality, to have more patients walk out of the hospital fully functional. Time is everything for stroke treatment; the quicker we are able to assess and attend to a patient, the better his or her chances are for recovery.”

The UT Mobile Stroke Unit is funded through a public-private collaboration for which more than $3 million has been raised, which will enable operation for up to three years. The Unit will operate 12 hours a day, one week on and one week off beginning this month.

**Novel Concussion Assessment Technology Wins Research Support from the Mayo Clinic**

Neuro Assessment Systems, Inc. and the Mayo Clinic are set to collaborate on studying a new system for the assessment of central nervous system (CNS) changes associated with concussion, TBI, aging-related events, and the effectiveness of pharmaceutical agents.

The NeuroScreen system is a proprietary hardware and automated software system that detects individual brain function differences in order to monitor changes in CNS function that are critical to diagnosis and treatment of a variety of brain health issues. It uses non-invasive electroencephalogram (EEG) measurements to extract event-related potentials (ERPs), which are obtained by repeatedly stimulating the brain with a specific task and measuring the brain’s response to obtain a stable measure. This provides a snapshot of how the brain processes information during the task, allowing for the evaluation of multiple brain health issues that were previously undetectable. Subsequent testing allows the system to assess changes in the way the brain is processing the same task and can provide critical information to physicians about injury and recovery.

**Immune Cells in Brain May Play a Role in ALS**

Researchers have identified immune cells in the brain that may play a direct role in the development of amyotrophic lateral sclerosis (ALS), potentially offering hope for new therapies to target the disease (Science, March 18, 2016). The investigators developed two genetic strains in mice lacking the gene C9orf72, which they found is important for the function of the immune system in the brain. Instead of developing ALS, mice without the gene unexpectedly suffered immune system abnormalities. Lysosomes that normally dispose of unwanted cellular material stopped functioning properly without the C9orf72 gene.