Deep Brain Stimulation Results in Slower Cognitive Decline in Older Adults

New findings by a team of researchers at the Krembil Neuroscience Centre of Toronto Western Hospital have provided further insight into the effects of deep brain stimulation (DBS) in the treatment of Alzheimer’s disease.

Forty-two patients with mild Alzheimer’s disease were enrolled in a randomized, double-blind multicenter Phase II clinical trial and implanted with DBS electrodes directed at the fornix. To better measure the impact of electrical stimulation in the brain, patients were then randomly assigned to either the “on” or “off” stimulation group and monitored for 12 months following the procedure. Once the trial follow-up was complete, all patients then had their electrodes turned on.

Results showed that DBS stimulation of the fornix continued to be safe and that, although overall there were no differences in cognitive outcomes between the “on” and “off” participants, those 65 and older appeared to experience slower cognitive decline. Another finding of interest was that the brain’s ability to metabolize glucose increased over the year-long study period in patients receiving electrical stimulation, indicating that the brain networks made dysfunctional by Alzheimer’s disease improved in some ways.

Physical Declines Begin as Early as 50 Years Old

Physical declines begin sooner in life than typically detected, often when individuals are still in their 50s, according to a study that focused on a large group of U.S. adults across a variety of age groups.

In a study that focused on a large group of U.S. adults across a variety of age groups, researchers found that physical declines begin sooner than typically detected, often when individuals are still in their 50s.

Researchers studied a group of 775 participants enrolled in the Measurement to Understand the Reclassification of Disease of Cabarrus/Kannapolis (MURDOCK) Study. Participants ranged in age from 30 to 100, with broad representation across sexes and races. All participants performed the same simple tasks to demonstrate strength, endurance, or balance: rising from a chair repeatedly for 30 seconds, standing on one leg for 1 minute, and walking for 6 minutes. In addition, their walking speed was measured over a distance of approximately 10 yards.

Men generally performed better than women on the tasks, and younger participants outperformed older participants. However, the age at which declines in physical ability began to appear (50s) was consistent regardless of gender.

Resveratrol May Restore Integrity of Blood–Brain Barrier in Patients With Alzheimer’s Disease

Resveratrol, given to patients with Alzheimer’s disease, appears to restore the integrity of the blood–brain barrier, reducing the ability of harmful immune molecules secreted by immune cells to infiltrate from the body into brain tissues, according to researchers at Georgetown University Medical Center.

The study examined specific molecules in the cerebrospinal fluid taken from participants with biomarker-confirmed Alzheimer’s disease—19 were given a placebo and 19 were treated daily for 1 year with resveratrol.

Researchers found that treated patients had a 50% reduction in matrix metalloproteinase-9 levels in the cerebrospinal fluid. They also found that resveratrol increased the level of molecules linked to a long-term beneficial or adaptive immune reaction, suggesting involvement of inflammatory cells that are resident in the brain.

Resveratrol should be further tested in a Phase III study, but the agent is unlikely to be a complete treatment for Alzheimer’s disease.

or other demographic features. Specifically, men and women in that mid-life decade began to have a decreased ability to stand on one leg and rise from a chair. The decline continued through the next decades. Further differences in aerobic endurance and gait speed were observed, beginning with participants in their 60s and 70s.

The study provides physical ability benchmarks that could be easily performed and measured in clinical examinations, providing a way to detect problems earlier.


Odor Test May Predict Cognitive Decline and Detect Alzheimer’s Disease

Researchers from Columbia University Medical Center, New York State Psychiatric Institute, and NewYork-Presbyterian reported that an odor identification test may prove useful in predicting cognitive decline and detecting early-stage Alzheimer’s disease.

Researchers administered the University of Pennsylvania Smell Identification Test (UPSIT) to 397 older adults (average age = 80 years) without dementia from a multiethnic population in northern Manhattan. All participants had a magnetic resonance imaging scan to measure the thickness of the entorhinal cortex—the first area of the brain to be affected by Alzheimer’s disease.

Four years later, 50 participants (12.6%) had developed dementia and approximately 20% had signs of cognitive decline. Researchers found that low UPSIT scores, but not entorhinal cortical thickness, were significantly associated with dementia and Alzheimer’s disease.

In another study, researchers evaluated the usefulness of UPSIT and tests that measure the amount of amyloid in the brain in predicting memory decline. They administered UPSIT and performed either beta amyloid positron emission tomography scanning or analysis of cerebrospinal fluid in 84 older adults (median age = 71 years). Of these, 58 participants had mild cognitive impairment.

Researchers followed the participants for at least 6 months. At follow up, 67% of participants had signs of memory decline. Testing positive for amyloid with either method, but not UPSIT score, predicted cognitive decline. However, participants with a score of <35 were more than three times as likely to have memory decline as those with higher UPSIT scores.


Most Older Adults Oppose Government Involvement in Health Care Services

A new national poll of approximately 2,000 registered voters older than 65 sponsored by Bring the Vote Home found that most U.S. older adults oppose a Medicare policy requiring a govern-
ment contractor to approve claims for physician-prescribed home health care services, which are often recommended by physicians for older adult patients following hospitalization to ensure a smooth transition from the acute setting to the home. These results follow the recent implementation of a “pre-claim review” demonstration by the Centers for Medicare & Medicaid Services, which will impose burdensome documentation requirements on home health agencies and referring physicians that home health leaders warn could lead to care delays and increased health care costs.

Key findings from the poll include:

• Four of five (80%) older adults believe it is likely that requiring a government contractor to approve claims for Medicare home health care services will result in delayed care for patients in need of prompt care.

• 77% of older adults believe requiring a government contractor to approve care will increase the cost of Medicare.

• 75% of older adults believe requiring a government contractor to approve care will increase out-of-pocket costs.

• 76% of older adults most trust health care professionals (primary care physicians and nurses) to handle issues related to health care (compared to 6% trusting the government).


Individuals With Dementia Report Positive Personal Outlooks Following Diagnosis

Results from a study of patients with mild cognitive impairment (MCI) or early dementia indicate their outlook is not as dark as expected.

Researchers asked 48 men and women with early dementia or MCI a series of questions, using the Silver Lining Questionnaire (SLQ), about their quality of life and personal outlook post-diagnosis. The instrument measures the extent to which individuals believe their illness has had a positive benefit in areas such as: improved personal relationships, greater appreciation for life, positive influence on others, personal inner strength, and changes in life philosophy. The SLQ has been administered previously to patients with cancer diagnoses, but not to patients with MCI/dementia.

Results showed positive responses, with higher scores on appreciation and acceptance of life; less concern about failure; self-reflection, tolerance of others, and courage to face problems in life; and strengthened relationships and new opportunities to meet people.