White Matter Hyperintensities

As we noted in our blog post last month, recent Alzheimer’s research has been focused on understanding the role of vascular (blood vessel) abnormalities in the brain. In a new study published in JAMA Neurology, researchers from Columbia University suggest that white matter hyperintensities, or WMHs, may play an important role in early diagnosis of Alzheimer’s.

WMHs are high-intensity visualizations on neuroimaging scans that indicate areas of blood vessel leaks in the brain. WMHs show up on MRI and PET scans of individuals who have suffered strokes, microbleeds, or other cerebrovascular diseases.

Using data from the Alzheimer’s Disease Neuroimaging Initiative, the study looked at brain scans of twenty subjects with Alzheimer’s, fifty-nine subjects with mild cognitive impairment, and twenty-one controls. They found that WMHs volume predicted Alzheimer’s diagnosis independently of amyloid levels. The same was seen in mild cognitive impairment. WMHs were just as predictive of mild cognitive impairment as amyloid.

The researchers, led by Assistant Professor of Neuropsychology Adam M. Brickman, believe that WMHs, in addition to amyloid, “may provide a second hit necessary for the clinical manifestation of the disease.”

These findings suggest that we may be able to improve early diagnosis of Alzheimer’s and mild cognitive impairment by addressing cerebrovascular issues. And since vascular abnormalities are often preventable through exercise and a healthy diet, lifestyle changes again stand out as powerful interventions.


Letter from the Executive

The Dementia Therapeutics program is now in full swing. We are busy admitting new clients and have already seen favorable anecdotal results from our initial cases. I could not be more pleased and want to congratulate and thank my fantastic team for their efforts in making the launch of Dementia Therapeutics incredibly successful.

In addition to attending the annual meeting of the American Academy of Neurology this month, where I acquired knowledge of the latest research findings in dementia evaluation and treatment, I will be appearing on the upcoming radio broadcast of Porch Talk, hosted by Jeannine Clark, a medical social worker in Half Moon Bay, CA. The episode will focus on the cognitive decline associated with the aging process as well as aspects of dementia and its treatment. If you are interested in listening to this episode, it will be broadcast on Sunday, March 31st at 4:00 pm on KHMB radio, AM 1710, and will be available afterwards in the Porch Talk archives at www.KHMBradio.com.
Seniors in the City

A growing number of retirees want to live out their golden years in the bustling neighborhood of a city. With good public transit, lots of shops and restaurants, and plenty of cultural activities to keep them busy, a city offers seniors many opportunities to maintain their active lifestyles while living at home. Fortunately, various industries are working to make city-living easier for one of our largest retiree generations in US history.

The housing industry is undeniably a major player. Surveys have found that more and more retirees want to continue living in their homes close to downtowns, mostly because they want to keep working. Towns like Parker, CO are building cohousing communities for seniors in the downtown area, with 40 condominium-style apartments expected to finish next year. These surveys also highlighted an interesting fact, that young working professionals and older adults share common values in living in the city. Small, comfortable apartments near downtown are attractive to the young professionals who work there, and older adults who want to live independently but with accessibility to guidance close by. The Lennar Corporation, one of the biggest builders in the country, began offering multigenerational homes near downtowns in California and Arizona; these are first-floor apartments that young people can use at first and then be taken over by an older generation, such as their parents.

Another sector stepping in to help is the tech industry. Engineers are making home sensors, alarms, and communication devices more intuitive and easier to operate, providing care remotely while reassuring family members. The concept of “telecare” – a balance between nursing homes and independent living – is starting to emerge in places across the country. In Lafayette, IN, a company called Rest Assured installs sensors and communication devices in the home, and train staff to monitor them from their offices.

Improvement in public transit is also key. Cincinnati, OH and Grand Rapids, MI are among the dozens of US cities building better rail and bus lines for older adults who cannot drive and young professionals commuting to work. The desire for good public transportation is yet another common interest among young and old.

“We already know that in a decade there won’t be enough caregivers to help the number of retirees that need support. We’re finding other ways to interact and provide care. That involves new technology. It also involves
new ways to organize ourselves in neighborhoods and new relationships with people to provide care,” says John P. Reinhart, president of a research and marketing group called Innovate LTC in Louisville, KY.

All these efforts demonstrate that businesses, like the housing, technology, and transportation industries, are eager to help retirees avoid having to up and move away from the environment they have grown to love. Because, like Dorothy says, there’s no place like home, even if your home is in the heart of the city.


Enriched Environment more protective than just Exercise

Looking to purchase a new and intriguing piece of artwork, gardening tool, or electronic device? It may be just as beneficial for your brain as stepping on a running machine.

A new study has found that an environment full of novel objects and activities may be more effective in preventing Alzheimer’s disease than aerobic exercise alone. Although numerous studies have pointed to the rewards of an enriched environment for the brain, this study is among the first to claim that it is more effective than just exercise.

Researchers led by Dennis Selkoe, professor of Neurologic Disease at Harvard Medical School, compared mice living in cages with objects of various shapes and colors, changed daily, to those living in cages with only running wheels. It turned out that mice living in the enriched environment for 4 weeks had significantly more long-term potentiation (LTP) in the hippocampus than the exercise-only group. LTP is the strengthening of connection between two neurons that causes learning and memory. In fact, LTP in the novelty group increased by 180% whereas the exercise group was at 158%.

The researchers then extended their study to older adult mice. Despite a smaller effect initially (177% vs. 153%), the enriched environment became much more potent when it was prolonged at 8 weeks (195% vs. 153%). This suggests that exposure to novelty can still be effective at an older age if it is more intensive and persistent.

Though the main goal of the study was to investigate the mechanism by which enriched environments facilitate the adrenergic system to induce LTP and protect against amyloid plaques, the most interesting part came out to be that exposure to novelty won over exercise in protecting against amyloid plaques.
The paper ends with a call for more commitment to nonpharmacological studies in guarding against Alzheimer’s disease. Physical activity is undoubtedly valuable for the brain and overall health, but it could be an even better defense when combined with constant exposure to novelty in daily life. And it could start with something as simple as decorating your home with an unfamiliar piece of art, or facing the challenge of our ever-advancing world of tools and technology.


Upcoming Events

April Info Sessions

Coming up in April, we will be hosting more FREE info sessions in Palo Alto, San Mateo, and Los Gatos.

Click here to sign up or tell us where you would like to see a session in the future.

https://www.dementiatherapeutics.com/RSPV/

Recognizing and Addressing Diminished Capacity Secondary to Dementia: Cognitive, Behavioral, and Emotional Manifestations and Options for Treatment

With dementia and its associated costs continuing to increase, professional fiduciaries will require an increased understanding of dementia and appropriate care. Dr. Gontkovsky and Dr. Powell of Dementia Therapeutics will be presenting the above titled presentation at the 18th Annual Educational Conference of the Professional Fiduciary Association of California on April 26th at 11:15 in the Hyatt Regency Monterey.

They will provide a comprehensive overview of the diagnostic criteria for dementia and discuss the specific cognitive, behavioral, and emotional manifestations of the various types of dementia. Various treatment and care options will be reviewed, including home care, medication, lifestyle change, and non-pharmacological intervention. They’ll present scientific findings of how cognitive rehabilitation can promote increased functioning and quality of life for individuals with neurological disease. They’ll conclude with examples of interventions designed by Dementia Therapeutics to help delay the onset of new symptoms and slow the progression of existing symptoms among individuals with cognitive deterioration.