

Keep Memory Alive

Cleveland Clinic Lou Ruvo Center for Brain Health



MRI



Bono



Larry & Camille Ruvo



Cleveland Clinic Lou Ruvo Center for Brain Health. Photo by Tom Donoghue



Larry & Camille Ruvo | Photo by Tom Donoghue

Letter from the Founders

Camille and I are grateful to be able to experience the power of love every time we visit Cleveland Clinic Lou Ruvo Center for Brain Health. The doctors, staff and volunteers radiate warmth and kindness to each and every patient, which is one of the elements that distinguish the Lou Ruvo Center for Brain Health from anywhere else. While this emulation of Cleveland Clinic's patient-first motto is vital, there is another person in the picture that epitomizes what love, devotion and support truly mean at the highest level, and that is the caregiver.

We witness the power of love when a family member helps a parent from the car and in to his appointment, carefully walking with slow steps; when a man in a Music Therapy class pulls a note from his wife to remind him that she is only in the next room in a caregiver support meeting and that she loves him very much; when a person signs up to be in a clinical prevention trial because they do not want one more person to watch their parent struggle with a horrific brain disease like they did. Caregivers never get a break, never stop worrying and never stop wishing for the day when a meaningful treatment or cure for brain diseases, such as Alzheimer's or Parkinson's, is discovered.

The Lou Ruvo Center for Brain Health represents each and every one of us as most, if not all of us, know someone who has been impacted by brain disease. We are fortunate to have a world-renowned institution available in our own backyard, the Cleveland Clinic and as philanthropy continues, opportunities expand. Without your support, the Lou Ruvo Center for Brain Health wouldn't exist. We thank you and hope you continue to champion Cleveland Clinic Lou Ruvo Center for Brain Health.

– **Camille and Larry Ruvo**, *Founders of Keep Memory Alive*

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Siegfried & Roy reunited



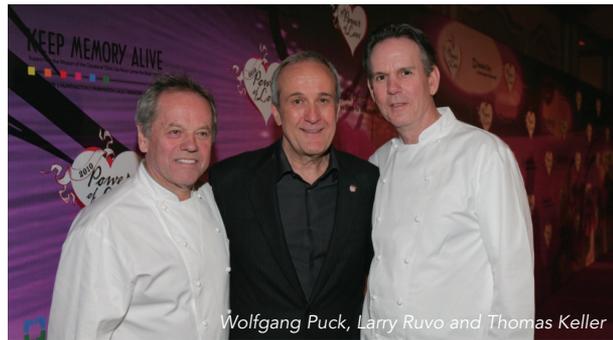
Gwen Stefani



Ronald Perelman



Jon Bon Jovi



Wolfgang Puck, Larry Ruvo and Thomas Keller



Andre Agassi



Michael Mina



Keep Memory Alive Gala 2015

A Gala Event

Celebrating Community, Caregivers at Keep Memory Alive's 21st Annual Power of Love®

Philanthropy, community service, caregiving, and exquisite food and wine all will be front-of-mind at Thursday night's (April 27) Keep Memory Alive's 21st annual Power of Love® gala. The event will raise funds and support for ongoing research projects and treatment programs at Cleveland Clinic Lou Ruvo Center for Brain Health.

Specifically, this year's soiree celebrates three luminaries in our community: Ronald O. Perelman, chairman and CEO of MacAndrews & Forbes Inc.; tennis legend and Las Vegas local Andre Agassi; and Siegfried Fischbacher, one half of the iconic Siegfried & Roy duo. They were reunited for a final farewell performance at the 2009 gala with their tiger Montecore.

Perelman will be honored for his philanthropic efforts in the community at large, while Agassi will be feted with the Community Leadership Award. Fischbacher will receive Keep Memory Alive's first-ever Caregiver Award for his selfless dedication to his friend and former stage partner, Roy Horn, who was injured while performing in 2003.

"Roy and I salute everyone who cares for a family member or friend facing a medical crisis," says Fischbacher. "I know firsthand the emotional support a caregiver gives a patient is a powerful part of the healing process."

Keep Memory Alive is renowned for the entertainment it secures for the gala every year, and the 2017 performance lineup is no exception, featuring Gwen Stefani

and Jon Bon Jovi. In previous years, it has featured Celine Dion, Andrea Bocelli, Gloria Estefan, Barry Manilow and many others. Among the celebrity supporters are Sharon Stone, Steven Tyler, and Tony Bennett, who celebrated his 90th birthday at the gala.

In addition to meaningful awards and incredible performances, the night will boast remarkable wine, cocktails, and delectable cuisine prepared by celebrity chef Wolfgang Puck, and avid supporter of Keep Memory Alive from the very beginning, two decades ago and Agassi's business partner, star chef Michael Mina.

Power of Love® was born in 1996, when Larry Ruvo, Founder of the Keep Memory Alive, and friends gathered at Wolfgang Puck's Spago Restaurant to celebrate the one-year anniversary of the death of Larry's father, Lou. The senior Ruvo had suffered from Alzheimer's, and as the old friends told stories about Lou, they started donating money in his memory.

The event has been held in one form or another every year since and continues to expand as the money raised exclusively supports the Lou Ruvo Center for Brain Health.

"We've grown a lot over the years — from the back room of a restaurant to 1,600 attendees at the MGM Grand Garden Arena — but the mission is the same," said Larry Ruvo. "To raise money and eventually find a cure."



Larry & Camille Ruvo | Photo by Tom Donoghue

The Importance of Giving

In the world of degenerative brain disease, research and care can be pricey. Brain scans cost money. Providing caregiver and community education programs is yet another expense.

These are some of the reasons why Cleveland Clinic Lou Ruvo Center for Brain Health raises money from the community every year. It's precisely why every donor — and every dollar — make a difference.

Keep Memory Alive, the fundraising entity integrated with the Lou Ruvo Center for Brain Health, raises funds exclusively to support the center's mission. Co-Founder Camille Ruvo oversees the development, event planning, and fundraising efforts.

This means Camille Ruvo has been hard at work making plans for the upcoming Power of Love® gala. It also means she knows better than anybody how important fundraising can be. Camille Ruvo doesn't only focus on raising money from big donors; over the years she has made it a priority to reach out to a broad audience and involve donors at every level.

Keep Memory Alive's most recent fundraising initiative, "A Penny for Your Thoughts," embraces the notion that every donation matters, no matter the size.

All proceeds from the "A Penny for Your Thoughts" campaign go to the caregiver and community education programs, helping the Lou Ruvo Center for Brain Health foster a brain span that matches the current average human lifespan.

The slogan was the brainchild of Camille Ruvo herself.

"As important as big donors at the Power of Love® gala are, it's equally as important to include the entire community in raising money to support brain health," said Camille Ruvo. "Too often I'd hear that people wanted to give but they only had \$20. We want them to know truly, every dollar makes a difference. As an example, a \$15 dollar donation can buy a book for our Lynne Ruffin-Smith library for caregivers."

To engineer a grassroots campaign, Keep Memory Alive engaged local public schools in the launch of the "A Penny for Your Thoughts" campaign, challenging students (and the families of students) to bring in and donate their spare change. Almost across the board, each participating school raised roughly \$10,000 apiece. Some schools raised less. Others raised even more.

Despite the federal and state grants, Camille Ruvo and her husband Larry Ruvo, Co-Founder of Keep Memory Alive, believe local philanthropy is critically important to the long-term success of current brain health research and to the survival of the center overall.

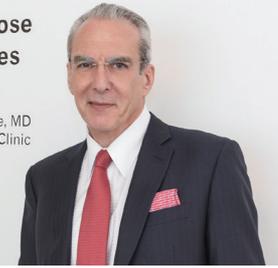
If you wish to support Keep Memory Alive, go to keepmemoryalive.org/GiveLR



Cleveland Clinic Lou Ruvo Center for Brain Health | Photo by Tom Donoghue

“The future belongs to those who seize the opportunities created by innovation.”

Delos M. Cosgrove, MD
CEO & President, Cleveland Clinic



Dr. Jeffrey Cummings



Dr. Brent Bluett assists a patient during a visit

What is the Lou Ruvo Center for Brain Health?

Cleveland Clinic Lou Ruvo Center for Brain Health is a one-of-a-kind concept in medicine: a medical center dedicated to pursuing more effective treatments for brain diseases and to providing top-quality care for patients affected by these diseases, as well as for the family members and friends who love the patients most.

The Lou Ruvo Center for Brain Health also serves as one of the largest Alzheimer’s clinical trial sites in the country, currently conducting more than 20 clinical trials in an effort to combat different issues afflicting the human brain.

Its integrated fundraising entity, Keep Memory Alive, raises money to advance the science behind brain health as well as fund education and provide free social services to the community.

In short, the facility is on the front lines of the search to find a cure for degenerative brain disease.

All told, the Lou Ruvo Center for Brain Health treats brain diseases including Alzheimer’s, Parkinson’s and Huntington’s diseases, Lewy Body dementia, frontotemporal dementia, multiple sclerosis and multiple system atrophy. Affiliated researchers also study the subjects of memory decline, normal cognition, and repeated head trauma in active and retired professional fighters.

Based in downtown Las Vegas, in a building designed by world-renowned architect Frank Gehry, the Lou Ruvo Center

for Brain Health prides itself on providing high quality patient care and scientific leadership; 15 full-time doctors have published more than 200 scientific papers. Technology, including a sophisticated 3-Tesla MRI scanner, is state-of-the-art. The building has no waiting rooms, making each and every visit individualized, personal, private, and dignified.

As the name makes clear, Cleveland Clinic Lou Ruvo Center for Brain Health is part of Cleveland Clinic, ranked the No. 2 hospital in the country by *U.S. News & World Report*. Toby Cosgrove, MD, President and CEO of the larger organization, says the affiliation benefits doctors and patients alike.

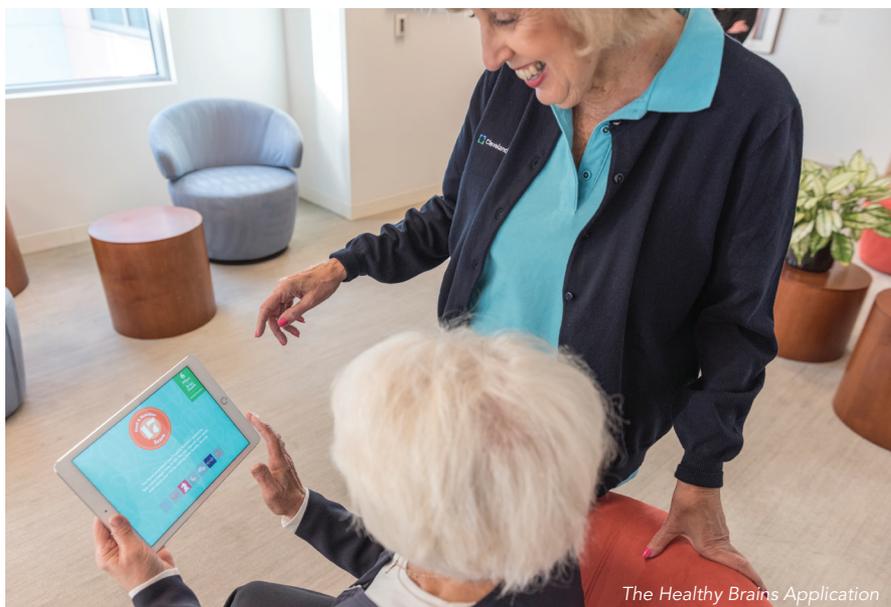
“Over the past seven years, the Lou Ruvo Center for Brain Health in Las Vegas has championed Cleveland Clinic’s mission to be the world’s leader in patient experience, clinical outcomes, research and education,” said Toby Cosgrove, MD, President and CEO of Cleveland Clinic. “Through research, clinical trials, advanced imaging, individualized rehabilitation and care programs for both patients’ and their families, Cleveland Clinic Lou Ruvo Center for Brain Health is focused on the discovery of new treatments for challenging neurologic disease.”

Perhaps most impressively, the Lou Ruvo Center for Brain Health values and celebrates caregivers, offering extensive education and support programs to help those closest to the patients provide the best support.

By the Numbers

Since 2009, Cleveland Clinic Lou Ruvo Center for Brain Health has expanded brain health treatment in Las Vegas. Here’s are some of the facility’s accomplishments:

- Facilitated more than 108,000 patient appointments with in-house medical providers.
- Hosted annual live continuing medical education conferences for more than 1,900 physicians and providers, with an additional 5,000 online views.
- Engaged volunteers to provide more than 98,000 unpaid hours of compassionate, welcoming support to patients and families.
- Provided no-cost social services support to more than 5,000 individuals who have accessed more than 26,000 visits to patient and family service programs.



The Healthy Brains Application



Dr. Charles Bernick talking with patients

How to Recongnize Brain Disease

Brain disease is everywhere at this moment in human history — a silent killer that slowly strips away everything we know about the ones we love most.

“The statistics are frightening. Approximately 5.4 million Americans suffer from Alzheimer’s, and if no disease-delaying therapies are found soon, the number is expected to nearly triple by 2050,” said Dr. Charles Bernick, MD, MPH, Associate Medical Director at Cleveland Clinic Lou Ruvo Center for Brain Health. According to the Parkinson’s Disease Foundation, as many as 1 million Americans live with Parkinson’s disease. Doctors estimate 2,500 Las Vegans are afflicted with multiple sclerosis.

“How do you know if someone you love might be experiencing one of these diseases? The first step is to be vigilant for some of the telltale symptoms and signs,” said Dr. Bernick.

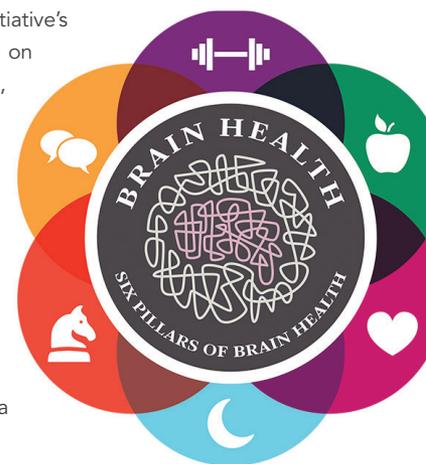
He added that the most common sign of natural aging is a general decline in the speed with which we process information. Things may stay on the tips of our tongues a little longer; recalling certain memories may take longer than we expect. Eventually, he said, most people work through these speed bumps to function properly. When people can’t, or if they try to no avail, it may be cause for concern.

“If symptoms are progressive — that is, if they get worse — that’s a red flag,” said Dr. Bernick, who was the first doctor hired at the Lou Ruvo Center for Brain Health in 2009. “Another sign is when people are making errors on their previously flawless day-to-day errands and outings.”

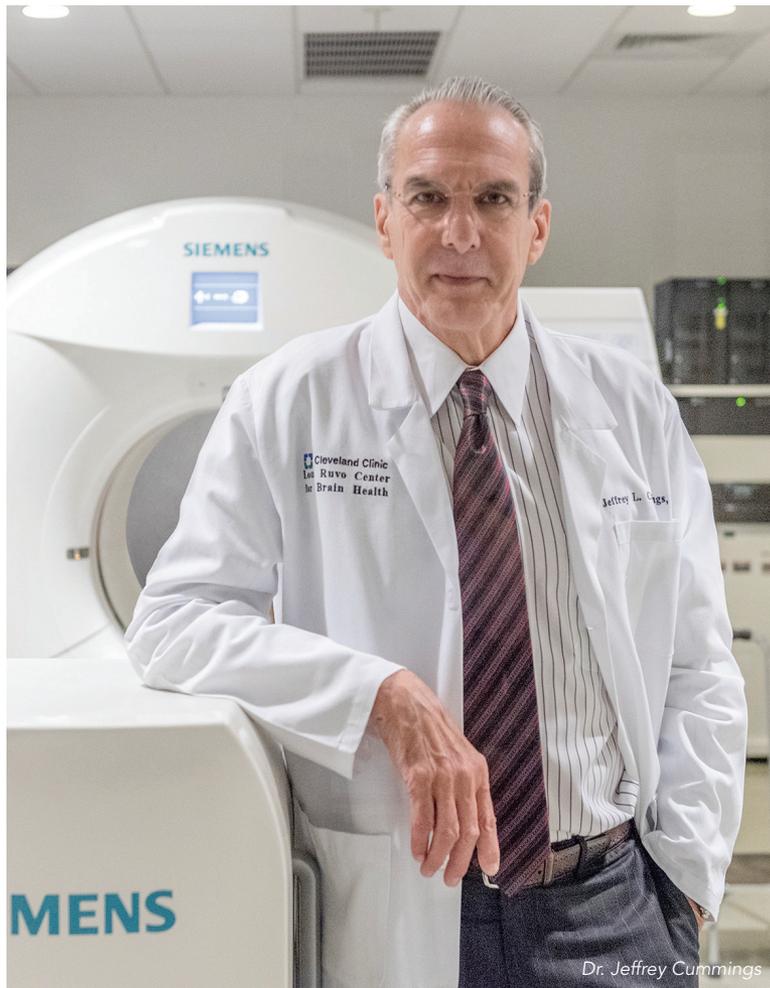
What happens if symptoms do progress? In a nutshell, call for help, and set up an appointment for your loved one to come in for an evaluation (or to participate in a clinical trial, which is available at no cost).

For those who are currently healthy and eager to keep their brains in tip-top shape, consider participating in the Healthy Brains Initiative. This program, which was developed by the Lou Ruvo Center for Brain Health, comprises a website (HealthyBrains.org), a mobile app, and an online community, enabling anyone to complete a free, online brain self-assessment, receive personalized reports, and keep up-to-date on brain health news and related scientific breakthroughs (especially those by researchers at the center itself).

Following completion of the Initiative’s brain check up, which is based on the Six Pillars of Brain Health, users are given a Brain Health Index score and customized recommendations about how to improve their brain health. The pillars are physical exercise, food and nutrition, medical health, sleep and relaxation, mental fitness, and social interaction; each is equally important to a healthy brain.



Six Pillars of Brain Health



Dr. Jeffrey Cummings

Alzheimer's Facts

Alzheimer's is a fatal disease that causes progressive decline in memory and other aspects of cognition. Here, in no particular order, are some interesting facts about the condition:

- In most people with Alzheimer's, symptoms first appear in the mid-60s.
- By 2030, there will be an estimated 75 million people around the world with Alzheimer's, with the cost for caring for these individuals reaching \$2 trillion. By 2050, there could be more than 200 million people with the disease
- About 99 percent of drugs that are tested for Alzheimer's fail. The last "new" drug for Alzheimer's was approved in 2003.
- Alzheimer's is named after Dr. Alois Alzheimer, who discovered it in 1906.

On the Horizon

While the cure for most degenerative brain diseases still may be years off, clinical trials at Cleveland Clinic Lou Ruvo Center for Brain Health have some of the world's leading brain health researchers optimistic that new medicine and new treatments may postpone symptoms significantly, and greatly improve the quality of life for individuals with Alzheimer's by this time next decade.

Experts believe that one drug in particular, an intravenous fluid named *aducanumab* (pronounced AD-doo-can-oo-mab), might make a difference immediately — once it's approved by the FDA, of course.

The drug is now in phase three of clinical trials and is yielding promising results as it has proven to reduce toxins in the brain and stabilize cognitive decline, something very few other agents in phase three trials have done. But while *aducanumab* is making progress down the pipeline, it certainly wasn't created overnight.

Instead, the story of *aducanumab* dates back to the 2013 G8 Dementia Summit held in London, where member nations established the goal to identify a disease-modifying therapy for dementia by 2025. This set the stage for coordinated global actions, including the initiation of the World Dementia Council. A few months later, after national leaders across the globe also identified 2025 as the goal to treat or prevent Alzheimer's, the race was on.

Eventually, the course was spelled out in a scholarly, peer-reviewed paper titled, "The Path to 2025." The lead author on the document: Jeffrey Cummings, MD, ScD, Director of the Lou Ruvo Center for Brain Health, and one of the world's leading researchers on the subject of brain health.

In the paper, Dr. Cummings said that current drug development timelines made it unlikely to meet the 2025 goal. At the same time, he added that *aducanumab* was one of the only Alzheimer's drugs in trials right now that stood any chance of making it to patients by the deadline. Later, Dr. Cummings privately noted he was hesitant to use the word,

"cure," since there's still plenty of work to be done.

"We have almost no cures for chronic diseases such as heart disease, lung disease, liver disease, or brain disease," Dr. Cummings said. "This is a global opportunity of unparalleled proportion."

Despite the excitement over *aducanumab*, research into other drugs continues. According to Dr. Cummings, 75 percent of these trials are for disease-modifying therapies, while 25 percent represent symptomatic treatments. This means there's still a likely possibility that the drug that could end up working and saving millions of lives isn't even around as of today. It also means a strategy of treating symptoms ultimately could carry the day as the best option for managing the disease.

Regardless of the trials, technology is helping researchers peer into the brain like never before.

With the one-two punch of Positron Emission Tomography (PET) scans and Magnetic Resonance Imaging (MRI) scans, patients can get a sense of how two separate and pernicious proteins indicative of Alzheimer's disease called Amyloid and Tau vie for position in their brain cells, and what lifestyle changes they may want to consider making down the road, in the event that they do become ill.

All told, the new technology allows doctors to see those harmful proteins accumulating in the brain about 15 years before people develop symptoms. As Dr. Cummings sees it, this benefit raises some interesting questions.

"I can't help but ask myself, 'Should this tool be more available?' and 'Should people be able to request to know what their fate is likely to be?'" Dr. Cummings asked rhetorically. "These are tools that can give us information, and we don't always know exactly how to handle that information in an ethical and responsible way. My goal as a physician is to give patients the information they want, but not to press my views on them at all. What they choose to do with that information is up to them."

Leading the Way with Research

Cleveland Clinic Lou Ruvo Center for Brain Health is not only one of the country's foremost treatment and clinical trial sites for degenerative brain disease; it's also one of the world's leading research facilities on the subject.

One person involved with this research is Sarah Banks, PhD, Director of Neuropsychology. At any given time, Dr. Banks is working on a number of different projects, in addition to patient care.

Most recently, the Lou Ruvo Center for Brain Health and the University of Nevada, Las Vegas were awarded an \$11.1-million grant by the National Institutes of Health (NIH) to establish Southern Nevada's first Center of Biomedical Research of Excellence (COBRE). This was the first COBRE grant awarded by the NIH in Southern Nevada, and a large part of this grant uses brain scanning and advanced neuroimaging to understand the inflammation associated with brain disease.

It's worth noting that Dr. Banks is using data from this research to try to determine commonalities between Alzheimer's and Parkinson's to improve patient health and quality of life.

Dr. Banks also has been pressing ahead on the Professional Fighters Brain Health Study, a concerted effort to scrutinize the long-term impact of repeated head trauma for combat athletes. This project, entering its sixth year, uses brain scan data gathered from more than 725 study participants to try and understand why it is that after similar exposure to repeated head trauma, many fighters remain unaffected, yet some individuals experience cognitive decline.

There are two types of brain scans associated with this project. The first, Positron Emission Tomography (PET) scans, show the brain functions. The second, done on the Lou Ruvo Center for Brain Health's state-of-the-art Siemens Skyra Magnetic Resonance Imaging (MRI) machine (see sidebar), reveal the brain's structure in detail.

"If you're likely to get symptoms when you're 80 but we can help push them back until you're 90, that could help families, save money, and improve lives," she said. "That, more than anything, is my mission."

Information on participation in the center's research is at clevelandclinic.org/brainhealthtrials.



Emphasis on Caregivers, Education

"Until there's a cure, there's a caregiver," says Camille Ruvo.

This motto is illustrated by those who work at Cleveland Clinic Lou Ruvo Center for Brain Health, and it exemplifies the organization's double-edged commitment to finding a cure for degenerative brain diseases and to giving top-quality care for patients affected by them.

In other words, the phrase represents one of the center's strongest attributes: Putting patients and the people who support them first.

The emphasis on people is evident in the facility's very design. Architect Frank Gehry drew up the center to feel more like a luxury hotel than a hospital, with natural light, breezeways with outdoor seating and a sculpture garden. Founder Larry Ruvo insisted on other touches. Upon arrival, patients check in and go straight to exam rooms — there are no designated waiting rooms. Every patient receives a flower when he or she leaves.

It's not surprising that this attention to detail led the Lou Ruvo Center for Brain Health to collaborate with UNLV this past August and establish an undergraduate class on hospital design into the nation's first Master of Healthcare Interior Design program.

Beyond these subtle benefits, the Lou Ruvo Center for Brain Health offers a variety of other services at no cost to patients and caregivers alike. According to Dylan Wint, MD, NV Energy Chair for Brain Health Education, the social services department schedules support groups, individual counseling, and family counseling sessions throughout the year. Dr. Wint added the center also helps patients and their caregivers connect with resources outside the facility.

The center even schedules regular "Lunch and Learn" programs for patients and caregivers to learn more about the diseases and their impacts on various facets of life.

"The diseases that impact the brain of a patient also impact the brains of those who love the person with the illness," said Dr. Wint, whose work is funded by a five-year, \$1.25-million grant from the NV Energy Foundation. "Like most things that are emotionally wearying, having some information about your enemy can reduce some of the emotional toll for everyone involved."

Another way to minimize that toll: education programs for patients or patients and caregivers together.

Dr. Wint noted that while patients are in classes, caregivers can relax in the lounge or outside in the garden, or participate in caregiver support sessions. For many, this is the only alone time they enjoy all week — a benefit of a different sort.

Information on the Lou Ruvo Center for Brain Health's no-cost caregiver and community education programming is available online at keepmemoryalive.org/socialservices.