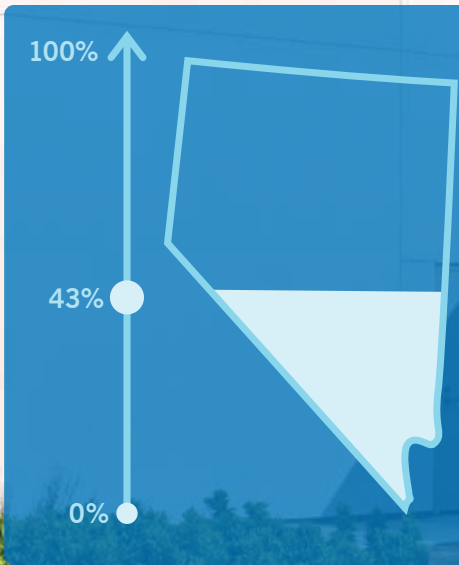


NEW THINKING ABOUT THINKING

| FALL 2024 |



"We're **43%** of the way to our endowment campaign goal. Now more than ever, we need our community's support to secure the future of neurological care in Nevada."

– **Larry Ruvo**

(See page 18)



DIRECTOR'S MESSAGE

This year marks the 15th anniversary of Cleveland Clinic Lou Ruvo Center for Brain Health's first patient visit. I am proud to reflect on the progress we have made in the treatment of degenerative cognitive disorders, movement disorders and multiple sclerosis (MS) since opening in Las Vegas in 2009 (see page 3).

Five MS treatments tested at the Lou Ruvo Center for Brain Health are now available nationwide as standard-of-care. It's a testament to our impact in offering Nevadans early access to emerging therapies and just one of the reasons behind our center being named a Center for Comprehensive Multiple Sclerosis Care (see page 5).

Perhaps the most significant milestone occurred in 2023 when we administered our first clinical infusion of the anti-amyloid drug, lecanemab (LEQEMBI®), the first fully FDA approved drug to slow the progression of Alzheimer's disease. As one of the leading Alzheimer's clinical trial sites in the country, we were the only site in Nevada to offer multiple studies of lecanemab. Now, we're conducting shared medical appointments to help families navigate their anti-amyloid treatment options (see page 10).

In addition to drug development, there is growing recognition of the importance of lifestyle modifications in reducing the risk for cognitive decline. Our Women's Alzheimer's Movement Prevention and Research Center at Cleveland Clinic is a prime example (see page 19).

In the next 15 years, I expect to see more profound breakthroughs in Alzheimer's disease care, especially the development of new therapies targeting aspects of the disease beyond amyloid. I also anticipate an increased emphasis on prevention and earlier intervention for all the conditions we treat.

From our annual Power of Love® gala and Summer Social & Rodeo events to gifts from hundreds of individuals throughout the year, philanthropy amplifies all that we do — including the 116,200 free visits to our educational, therapeutic and support programs we have provided our community in our first 15 years.

You can customize the news you receive in your email from Cleveland Clinic Nevada. Sign up today at clevelandclinic.org/NevadaNews. We are honored to be your trusted source for the latest information through free online and in-person educational programs, research and tips for a healthy brain span to match your lifespan.

Here's to the next 15 years!

DYLAN WINT, MD

Medical Director

*Camille and Larry Ruvo
Chair for Brain Health*

Director, Education

*Las Vegas Legacy
Chair for Neuroscience
Education*

Cleveland Clinic Nevada



On the cover:
Marking 15 Years
of Impact
(see page 3).



CONTENTS

■ FEATURES

- 3 15 Years, 15 Points of Impact
- 5 Nevada's Only Center for Comprehensive MS Care

■ WORLD CLASS CLINICAL CARE

- 7 Managing a Chronic Neurological Condition During Hospitalization
- 10 With New Alzheimer's Treatments, Shared Medical Appointments Answer Common Questions
- 11 Diagnostic Confirmatory Testing Helps Narrow Possibilities
- 12 The Art of Imaging
- 13 While Words Fail, the Mother-Daughter Bond Remains Strong

■ CARING FOR CARE PARTNERS

- 15 Music Therapy: Mission-Driven, Donors Supported
- 16 Driving: Stop or Go Time?

■ PHILANTHROPY AT WORK

- 18 Endowing the Future of Their New Community
- 19 Reimagining Healthcare For Women
- 21 Philanthropy Funds MS Research
- 23 Is Aging a Disease?

■ ON THE SCENE

- 24 Super Science: Las Vegas' First "Big Game"
- 25 Love Powers Year-Round Support For Caregivers
- 27 Dedicated Collaborators Host Events to Support Brain Health
- 29 Giddy Up for Good
- 31 Visitor Photo Gallery
- 33 Recognized for Excellence

NEW THINKING ABOUT THINKING



702.483.6000 | clevelandclinic.org/Nevada

Research, treatment and education for patients and families living with brain disorders

ALZHEIMER'S DISEASE
FRONTOTEMPORAL DEMENTIA
LEWY BODY DEMENTIA
AND OTHER DEMENTIAS

HUNTINGTON'S DISEASE
PARKINSON'S DISEASE
ATAXIA AND
OTHER MOVEMENT DISORDERS

MULTIPLE SCLEROSIS
AND NEUROIMMUNOLOGY

15 Years, 15 Points of Impact

CLEVELAND CLINIC LOU RUVO CENTER FOR BRAIN HEALTH | 2009 – 2024

We've been improving lives with each milestone we achieve at Cleveland Clinic Lou Ruvo Center for Brain Health. Here are some remarkable highlights from our first 15 years.

Thank you for joining us on this journey.

▶ **FDA approves five disease-modifying therapies for multiple sclerosis tested at our center**

Five treatments for multiple sclerosis studied at our center have received FDA approval and are now part of the clinical standard of care nationwide, creating more treatment options than ever for people living with MS.



▶ **First disease-modifying therapy fully approved by the U.S. Food and Drug Administration for the treatment of Alzheimer's**

Our center's participation in the study of lecanemab (LEQEMBI®) for more than three years contributed to the 2023 approval of this anti-amyloid drug shown to slow the progression of Alzheimer's disease. Now being administered clinically at our center and nationwide, lecanemab offers new hope for families.

▶ **The Women's Alzheimer's Movement Prevention and Research Center at Cleveland Clinic**

Embracing peer-reviewed science indicating that up to 45% of Alzheimer's cases might be preventable through risk reduction, our Women's Alzheimer's Movement Prevention and Research Center at Cleveland Clinic is the first and only in the nation dedicated to providing women sustainable approaches for healthy lifestyle modification.



▶ **Our world-class research and care has garnered national recognition across multiple specialties**

The first and only in Nevada to be named a CurePSP Center of Care, a Parkinson's Foundation Center of Excellence and a National Multiple Sclerosis Society Center for Comprehensive MS Care, these designations signal leadership and expertise to prospective patients and referring providers alike.

▶ **Nevada's first Comprehensive Genetic Testing Clinic for Huntington's disease**

Surrounded by clinical expertise to help manage the decision to test as well as the results, our Comprehensive Genetic Testing Clinic for Huntington's disease helps Nevada families with a history of HD prepare for the future.

▶ **Expansion of graduate medical education: First sub-specialized neurology fellowship programs in Nevada**

By graduating the state's first homegrown, sub-specialized neurology fellows, we have extended our center's expertise to the next generation of medical providers, thus increasing Nevadans' access to physicians with focused understanding of how degenerative brain disorders affect our community.



▶ **Building Nevada's health research infrastructure**

Less than a decade ago, overlooked and underfunded summarized southern Nevada's relationship with the National Institutes of Health (NIH). Now, the Lou Ruvo Center for Brain Health has expanded Nevada's NIH funding footprint by more than \$36.6 million, with funding leading to nationally published research.

▶ Publication of Alzheimer's Drug Development Pipeline paper

With the publication of the annual Alzheimer's Disease: Drug Development Pipeline paper that we launched in June 2016 when the national drug failure rate was at 99.7%, our researchers continue to contribute to a leading industry tool that has been presented at numerous global conferences and brings public awareness to the dire need for acceleration of drug development.



▶ Parkinson's Progression Markers Initiative

By identifying indicators of Parkinson's disease progression, physician-scientists will be able to better predict disability and, ultimately, slow or prevent it. The only site in Nevada to participate in the Michael J. Fox Foundation's PPMI study, we are taking a step in that direction.

▶ Installation of innovative imaging and launch of brain imaging research team

Our brain imaging research team uses the latest imaging technology to observe brain changes at a cellular level, aggregating data to inform novel research. They're identifying imaging biomarkers — or indicators of disease — to measure the efficacy of drug treatments and develop new techniques to predict individuals vulnerable to cognitive decline.

▶ Pioneering Chronic Traumatic Encephalopathy (CTE) research through the Professional Athletes Brain Health Study

Achieving recognition in peer-reviewed science, our landmark study of more than 900 active and retired professional athletes has contributed to national understanding of the long-term effects of repetitive head impact (RHI). And, we're finding that brain function can improve with the cessation of activities involving RHI.



▶ Biomarker discovery

Blood-based biomarkers, or indicators of disease, continue to be an area of focus in the pursuit of better diagnostics and treatments for Alzheimer's and other neurodegenerative diseases. Our clinician-scientists are on the forefront of this research, identifying several markers of brain injury and helping to develop new research diagnostic criteria for traumatic encephalopathy syndrome (TES) — the first step in being able to diagnose CTE in a living person.



▶ Angie Ruvo Endowed Caregiving Chair

Thanks to a philanthropically funded vision to establish the sustainable Angie Ruvo Endowed Caregiving Chair, we've been able to provide our Nevada community 116,200 no-cost visits for programming to educate and empower families caring for loved ones with degenerative brain disorders.



▶ Launch of the Healthy Brains Initiative

With growing evidence of the role lifestyle plays in dementia risk, the Healthy Brains Initiative educates consumers on six pillars key to maintaining brain health through a variety of on-demand content and community engagement activities. Since its inception in 2015, the initiative has provided more than 30,000 free brain health assessments and identified more than 2,000 candidates for clinical trial participation.

▶ Dementia Friendly Nevada

A galvanizing force within a group of like-minded community members, our leadership has helped expand inclusive programming and resources for Nevadans living with dementia and their care partners.



Nevada's Only Center for **COMPREHENSIVE MS CARE**

On May 3, 2024, the National Multiple Sclerosis Society (NMSS) recognized Cleveland Clinic Nevada as a Center for Comprehensive MS Care. Following in the footsteps of the Mellen Center for MS at Cleveland Clinic's main campus in Ohio, we are in good company in receiving this designation, which recognizes healthcare organizations that provide expert, multidisciplinary care. Cleveland Clinic also holds the distinction of being the first and only Center for Comprehensive MS Care in Nevada, building on the NMSS Partner in Care designation we have held since 2014.

Our approach to multiple sclerosis spans neurology, neurorehabilitation (physical, occupational and speech therapy), behavioral medicine, social work and education.

Angel Hernandez, Manager of Healthcare Stakeholder Engagement for NMSS's southwest region, says it takes four months to ensure an organization meets the society's rigorous designation standards.

Of note is the way the center's multidisciplinary team facilitates

collaborative communication between providers and people with MS. "Cleveland Clinic Lou Ruvo Center for Brain Health truly advocates for people with MS by delivering a coordinated, personalized approach to a range of services aimed at maximizing health, independence and quality of life," says Hernandez. "Our vision is that people leave an appointment at a NMSS Center for Comprehensive MS Care knowing they've received the best consultative approach to MS care available anywhere."



^ Nurse Jordana Janjua and canine friend at Walk MS

PATHWAYS TO WELLNESS

We collaborate with the NMSS to produce educational events open to anyone interested in learning more about living well with MS. In 2024, this includes a three-part, in-person series, Pathways to Wellness, addressing physical activity, sleep, nutrition, wellness research and emotional wellness.

Moderated by Jeff Bird, President of the Southwest Regional NMSS chapter, Lou Ruvo Center for Brain Health presenters at the June 15 event included Lucille Carriere, PhD, who also serves on the NMSS regional board, and Carrie Hersh, DO, MSc, who serves on the NMSS National Medical Advisory Committee.

Learn more

Don't miss out on free, daily educational, therapeutic and support programs open to the community. Sign up to receive our twice-monthly calendar update in your inbox: clevelandclinic.org/NVnews



+ Continue the story online: Learn how one person with MS leads an active life. clevelandclinic.org/DerekMS

WHAT DOES THIS MEAN TO OUR NEVADA COMMUNITY?

Hernandez says a Center for Comprehensive MS Care extends beyond its walls, including building relationships with other local providers to expedite referrals, leading educational programs for people with MS and creating opportunities for research participation. Since 2009, five new drugs studied at the Lou Ruvo Center for Brain Health have received FDA approval — an accomplishment made possible only by community participation in clinical research.



^ Angel Hernandez, in orange in center, celebrated the recognition with our MS team on May 3, 2024, speaking of the center's focus on ensuring equitable access to services for all people with MS.

Keiara Katz, an MS ambassador and activist for the National Multiple Sclerosis Society and person with MS who receives care at the Lou Ruvo Center for Brain Health, addressed the care team gathered saying,

“As we honor you as a Center for Comprehensive MS Care, let us not only celebrate your achievements, but also recognize the countless lives, including my own, that you have touched and transformed. Your commitment to innovation, compassion and excellence is a model for healthcare institutions worldwide.”



^ Keiara Katz, center, honors leaders of our MS team. (L - R): Madisen Mendez, OTR/L; Dr. Le Hua; Dr. Carrie Hersh; Dr. Lucille Carriere; and Erin Wilkinson, MSN, APRN-BC, MSCN

Managing a Chronic Neurological Condition

DURING HOSPITALIZATION

Whether unexpected or planned, a hospital visit can affect anyone's functioning and will likely aggravate chronic conditions treated at Cleveland Clinic Lou Ruvo Center for Brain Health. Once you enter their facility, hospital staff is in charge of your care, which means that medications Cleveland Clinic has been managing may be changed in the hospital, as will familiar routines established at home.

Our team of registered nurse care coordinators offers advice for successfully navigating your emergent situation while creating a sense of normalcy during your time in the hospital. These pointers on preparing for a hospital stay can help minimize disruptions.

Preparing for the hospital journey



PREPARE IMPORTANT DOCUMENTS

Trips to the hospital are often unscheduled, however you can prepare in advance. Have the following items ready to go at any time.

- Copies of current health insurance cards and a picture ID.
- Advance directives, indicating preferences for important health decisions.
- List of drug allergies.
- List of current medications, including dosage and instructions.
- Medical and surgical history, as well as the comprehensive After Visit Summary from your most recent visit to the Lou Ruvo Center for Brain Health summarizing your neurological condition and treatment plan.
- Important phone numbers (doctors, family, clergy).



PACK YOUR BAG

Before leaving for the hospital, add the following to your bag:

- Cellphone and charger.
- Familiar object from home, such as a favorite pillow or blanket.
- Toiletries.
- Glasses/contact lenses, dentures and hearing aids if you wear them.
- Book, puzzles or activities to stay busy and relaxed.
- Notebook and a pen for taking notes.

A safe plan for discharge

Need help navigating your options? The hospital's case manager will have resources, as does our social work team: 725.277.6266



DURING YOUR STAY

Establish a positive relationship with the nurse on each shift who can be your advocate and assist in coordinating your care.

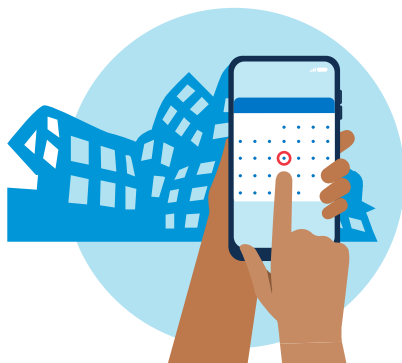
- Plan to be awake and alert or have your care partner or health advocate with you at each shift change to hear first-hand the updates in your care plan.
- Notify your Lou Ruvo Center for Brain Health team of the hospitalization because acute medical issues can alter the symptoms of conditions we treat. A message via MyChart is the best way to communicate non-emergency information.
- Establish a safe plan for discharge, which is required before hospitals can release you. Incorporate that phrase into your conversations with hospital staff while you sort out the next steps. Your “safe plan” may be discharge to a rehabilitation facility, long-term care facility or in-home with support from home health or a personal care assistant.



DISCHARGE DAY


Speak with the doctor in charge so you understand and receive a hard copy of:

- Medication changes and the reasons why.
- New orders for ongoing outpatient care.
- Your hospital record (hard copy or access to a patient portal).



AFTER LEAVING THE HOSPITAL

- Schedule a follow-up visit at the Lou Ruvo Center for Brain Health if the hospitalization was related to a condition for which you're treated at our center.
- Notify us of changes to medications we prescribe.
- Provide us the hospital records, including imaging.

 *Continued on next page.*

Managing a Chronic Neurological Condition During Hospitalization (continued)

Advocate for yourself or a loved one

Chronic neurological conditions are so nuanced that your hospital care team may not fully understand the complexities of your condition. You can politely share these tips.



COGNITIVE DISORDERS

(Alzheimer's, Lewy body dementia, vascular dementia, etc.):

Memory problems get worse when other medical problems arise. Take precautions to avoid confusion:

- Frequent re-orientation of the where, when, why and any other reassuring information, which can reduce agitation.
- The presence of a familiar face (family member, friend).
- Relatively active, well-lit days and quieter, darker nights.
- Continuing memory medications, unless there is a specific medical reason not to.
- Avoiding diphenhydramine (Benadryl®), which counteracts cognitive support medications.
- Limiting antipsychotics. Contact our office for advice on the best options for an individual situation.

“Ask to see a neurologist at the hospital. They will have the best understanding of your chronic neurological condition and can communicate your unique needs to your hospital care team.”

Amy Sheets, MSN, RN

“If you're a caregiver to a person with cognitive decline, you have valuable insight into their routine and typical behavior. Be realistic and help set expectations with hospital staff in a constructive way. For example, if the patient is agitated, it will be difficult to get a good MRI.”

Jessica Valle, BSN, RN, ONC

“Recognize that the care team at hospital is typically stretched thin, but willing to help. Build a good connection with nursing staff who can be your best advocates during your visit.”

Stacy James, RN



MOVEMENT DISORDERS

(such as Parkinson's disease, Huntington's disease, essential tremor)

Medical professionals unfamiliar with movement disorders may underestimate the importance of:

- Consistent administration of movement disorders medications on your at-home schedule (within 15 minutes) unless there is a specific medical reason for stopping them.
- Avoiding medications that make the neurologic illness worse (such as those that block dopamine, sedatives and certain pain relievers).
- Safe, frequent physical activity.
- Monitoring for swallowing changes to minimize risk of aspiration pneumonia and weight loss.

“Tell the care team at the hospital when you last had your movement disorder medication. A temporary order to take nothing by mouth can translate into not getting the correct dose at the usual time, which can result in motor and non-motor decline. Things can spiral downward quickly.”

Stephanie Giuffre, RN



MULTIPLE SCLEROSIS (MS) AND OTHER NEUROIMMUNOLOGICAL CONDITIONS:

Symptoms can worsen or return because of a medical problem elsewhere in the body. In MS, this is called a “pseudo relapse.” Before treating MS exacerbation symptoms, encourage hospital providers to evaluate carefully for:

- Medical problems besides MS.
- Infections, such as urinary tract infection, pneumonia or bronchitis.
- The necessity for steroids. Steroids can worsen infection; infection in turn aggravates MS.

“Ask the hospital care team, ‘If I didn't have [name of your neurological condition], what would you do for me?’ This ensures you are not being evaluated solely through the lens of your chronic condition.”

Nurah Ali, BSN, RN, MSCN

“If you're in the hospital for infection, taking MS medications that lower your immune system can make the infection worse, perhaps leading to sepsis. You'll want to discuss whether it makes sense to pause your MS medication.”

Jordana Janjua, BSN, RN

WITH NEW ALZHEIMER'S TREATMENTS, Shared Medical Appointments Answer Common Questions

Nancy and Dan Gildner's journey with lecanemab started in 2023 when they saw a news story about the new anti-amyloid drug treatment that slows disease progression in the earliest symptomatic stages of Alzheimer's disease. They quickly asked their family doctor and Nancy's general neurologist for a referral to Cleveland Clinic Lou Ruvo Center for Brain Health.

"I knew I had to do something about the changes I'd been noticing in my brain," says Nancy, who was diagnosed with Alzheimer's in 2023. "I've always been very organized, but recently I'd been spending a lot of time running around looking for things I'd misplaced."

Shortly after her December 2023 appointment with Dylan Wint, MD, Medical Director, Cleveland Clinic Nevada, she had a virtual follow-up visit. When Dr. Wint informed the couple that Nancy was indeed a candidate for lecanemab (LEQEMBI®), they wanted to learn more about what to expect from the 36 twice-monthly infusions.

Dr. Wint invited Nancy and Dan to Navigating Anti-Amyloid Therapy, where they joined other patient-care partner pairs in a shared medical appointment (SMA) over videoconference. Facilitated by a team of cognitive disorder neurology specialists, the group covers the pros, cons and logistics to help participants decide if they wish to move forward with the treatment.

"Dr. Wint and his nurse, Amy Sheets, gave presentations. Everyone in the group was so recently diagnosed and newly introduced to the concept of lecanemab that we didn't know what to ask," says Dan.

Nancy says the SMA helps you "realize you're not alone. Other people asked questions that interested us, too."

Neither had concerns about sharing personal health information: "These are strangers, and they'll probably remain strangers, so what's the difference? We're all facing the same thing," says Dan.

To create a safe and secure environment in which to share medical information, the Lou Ruvo Center for Brain Health requires all SMA participants to sign a privacy waiver.

The group discussed the potential for brain bleeding or brain swelling — amyloid-related imaging abnormality or ARIA — that is a known side-effect of lecanemab and can be detected via MRI.

Nancy was undeterred by this risk, and says she was "all in from day one." She began treatment in April and had her second of four required MRIs after her fourth infusion of lecanemab. During a follow-up appointment with Maileen Ulep-Reed, PhD, APRN, the nurse practitioner on the cognitive disorders team gave her the good news: Nancy was clear to continue with the lecanemab treatment.

∨ *Nancy and Dan Gildner*



Learn more about shared medical appointments for individuals with cognitive loss

In addition to Navigating Anti-Amyloid Therapy, we offer Living Well with Cognitive Changes, an SMA that addresses cognitive, behavioral and psychiatric symptoms secondary to dementia.

Contact your Cleveland Clinic neurology provider through MyChart or at 702.483.6000 to:

- See if an SMA matches your neurology treatment plans.
- Find out about upcoming dates for our SMAs.

+ Continue the story online: What is anti-amyloid therapy? clevelandclinic.org/anti-amyloid

Diagnostic Confirmatory Testing HELPS NARROW POSSIBILITIES

“Unfortunately, we see it too frequently,” says Zoltan Mari, MD, Director, Parkinson’s Disease and Movement Disorders Program at Cleveland Clinic Lou Ruvo Center for Brain Health, which is also the site of Nevada’s only Parkinson’s Foundation Center of Excellence.



“Patients come in wondering why the tremor in a limb isn’t responding to medication they’ve been taking since receiving a diagnosis of Parkinson’s disease some years ago, yet also hasn’t spread.”

His team’s first step? A thorough clinical exam. If inconclusive, they perform diagnostic-confirmatory testing, typically starting with a DaTscan™ followed by a skin biopsy if needed.

DaTscan, a form of a SPECT scan, is named for the dopamine transporter (DaT)molecule in the brain’s striatum, a cluster of interconnected nuclei involved in decision-making. The radioactive tracer ioflupane is injected into the blood and binds to the DaT molecules, providing a measure of how healthy the dopamine-producing nerve cells are. A normal DaTscan™ indicates the neurons that produce dopamine are at an age-appropriate number, meaning that Parkinson’s disease is not present.

A skin biopsy, approved for clinical use in 2022 and conducted in our outpatient office, looks for the

misfolding or clumping forms of alpha-synuclein protein, the presence of which suggests Parkinson’s disease, multiple system atrophy (MSA) or Lewy body disease (LBD). These three conditions are also classified as synucleinopathies due to the presence of abnormal alpha synuclein.

DaTscan is not in itself conclusive nor able to differentiate with certainty among the disease types. However, if it has ruled out Parkinson’s, the skin biopsy may help narrow down possible conditions.

“If the DaTscan is normal, we know with certainty the individual does not have Parkinson’s disease,” says Dr. Mari. “If the skin biopsy indicates abnormal synuclein, it might be MSA. Or, the biopsy might support a diagnosis of LBD, if we’ve observed dementia in our clinical assessment.”

The skin biopsy can be even more telling, he says, in considering progressive supranuclear palsy (PSP) versus Parkinson’s disease. “If the biopsy is positive, it’s more likely to be Parkinson’s, since PSP isn’t a synucleinopathy.”

Call Us

Contact us at 702.483.6000 to make an appointment and better understand a condition that concerns you.
clevelandclinic.org/NevadaMovement



The Art of Imaging

“I’m so happy to meet you today. Thank you for coming to see me. I’m Cristine. Come with me.”

That’s the calm, welcoming approach Cristine Chalifoux, nuclear medicine technologist, used with a patient whose caregiver reported he didn’t want to come into Cleveland Clinic Lou Ruvo Center for Brain Health for his imaging appointment. “He got right out of the car and followed me inside,” says Chalifoux.

“For me, medical facilities have always been comforting – a place where you go to help those you love feel better,” she says. Chalifoux has first-hand experience of the positive impact of quality medical care. She was a four-year-old when her newborn sister, Marie, was hospitalized with multiple maladies that left her handicapped and unable to speak. “As soon as I was old enough, I was part of the team making life good for Marie,” she says.

Today, Chalifoux is proud to work at the Lou Ruvo Center for Brain Health, which prioritizes world-class care. The center’s imaging team thrives on tailoring their approach, collaborating with patients to address individual concerns and fulfill imaging orders requested by healthcare providers, thus offering insight into a diagnosis or disease management.

Referring providers appreciate the detailed reports from Cleveland Clinic’s subspecialty radiologists, made possible by the quality of the Lou Ruvo Center for Brain Health’s imaging technology and, equally importantly, the skill of the technologists who guide patients through the process.

Successful imaging hinges on ingenuity and understanding of neurodegenerative conditions. As with photography, the more still the subject remains, the better the pictures. Technologists use several strategies to help people hold the necessary position during scans. Sometimes they strategically place light



^ Cristine Chalifoux working with a patient

weights on a patient to calm legs or provide sponges for them to hold to ease tremors. Others, such as those with limited mobility, are offered a pad, pillow or rolled up towel for comfort.

Chalifoux says the imaging technology team does whatever they can to help patients through procedures; often, family or other care partners offer great insight into what resonates best. The team has sung Christmas carols in July, held a patient’s hand and rubbed another’s shoulder for the entirety of the imaging, and redirected individuals who were fixated on why they couldn’t do imaging, such as a man who feared he’d miss his train. “I simply told him the train had been rescheduled and he happily got ready for his scan,” says Chalifoux.

“Instead of focusing on the health problem you might have, we want to help our patients focus on the care experience,” says Christine. “If you have a positive experience, it’s something to look forward to next time.”

“We strive to earn trust by being truthful and empathetic, explaining the process simply and working within a patient’s capabilities to get the images we need,” she says.



^ For Cristine, right, caring for her sister, Marie, started at a young age

Twisted a knee? Wrenched your shoulder? We can help.

The imaging services at Cleveland Clinic Nevada aren’t just for brains — we can image nearly any body part. Nuclear medicine, MRI, CT and PET images made in Las Vegas are interpreted or read by sub-specialized Cleveland Clinic radiologists in Ohio. The images are typically available online within 24 hours to patients and their referring physicians at Cleveland Clinic and throughout the community.

Call 702.701.7948 for appointments, which are sometimes available the same day. You don’t need to be a Cleveland Clinic patient to access our imaging services. Learn more at clevelandclinic.org/lasvegasimaging.

While Words Fail, THE MOTHER-DAUGHTER BOND REMAINS STRONG

“While I was growing up, my mother, Kuldeep Kaur, was vivacious, talkative and made friends quickly when we relocated every couple of years as my father’s military career progressed,” remembers Simrit Kaur Saraon, DNP, a member of the cognitive disorders team at Cleveland Clinic Lou Ruvo Center for Brain Health since 2017.

Throughout the frequent moves, the one constant was her mom, who was her best friend and a role model for “doing it all.” Kaur volunteered extensively and earned a master’s in sociology while raising Dr. Saraon and her brother, Aditya. Despite her busy schedule, she sent the children to school each day with a homemade lunch.

One of Kaur’s greatest attributes was her communication skills. Dr. Saraon recalls how her mother used stories from her childhood as parables to gently make a point. “She knew how to navigate society. We could talk with her about anything.”

However, while completing her own education — a master’s and doctorate in nursing at Duke University — Dr. Saraon began noticing changes in her mother. While sharing a story, Kaur would pause a few seconds, then start speaking again. “It struck me as different, but not a big deal,” says Dr. Saraon.

What is primary progressive aphasia (PPA)?

Aphasia is a brain disorder where a person has trouble speaking or understanding what others are saying. PPA leads to a gradual loss of language skills and is a sign of an underlying neurodegenerative disease, such as Alzheimer’s disease or frontotemporal dementia.

In early 2017 at age 69, Kaur went to an audiologist near her home in India for a hearing test. When the results indicated normal hearing, she shared her frustration with her daughter saying that she had difficulty understanding what she was hearing.

“I said, ‘Hold on, mom, you don’t hear? Or you don’t comprehend?’” remembers Dr. Saraon.

Upon learning it was an issue with comprehension, she asked Aditya to take their mother to a neurologist, who discovered some temporal lobe atrophy or shrinkage.

That fall, Dr. Saraon began looking for confirmation of the diagnosis she suspected based on her own long-distance assessment: primary progressive aphasia (PPA). She made an appointment for her mother with Charles Bernick, MD, a colleague at the Lou Ruvo Center for Brain Health. He confirmed frontotemporal dementia (FTD) with PPA.

Once diagnosed, Kaur returned to India, where she was still able to manage household bills and other instrumental activities of daily living.



^ Kuldeep Kaur at Duke University in 2017

What is frontotemporal dementia (FTD)?

When FTD affects lobes in the brain, neurons in those areas stop working, causing you to lose certain abilities.

Your frontal lobe, located right behind your forehead, is responsible for:

- Planning and decision-making.
- Judgment and reasoning.
- Social skills.
- Spoken language.
- Knowing what’s appropriate and inappropriate.
- Self-control over what you do and say.
- Movement

Located on the sides of your brain, the temporal lobes handle:

- Hearing.
- Understanding spoken language.
- Memory.
- Emotional expression and processing.



^ Dr. Simrit Saraon and Kuldeep Kaur in 2017

∨ Dr. Saraon



By 2018, Kaur's temperament was shifting from gentle to aggressive. She was becoming uncharacteristically territorial, telling family, "Don't go in my room. Don't sit on my bed."

There were language changes, too. "She was mixing English, Hindi and Punjabi not only while speaking, but also while writing," says Dr. Saraon.

In 2019, Kaur made another trip to

Las Vegas to visit her daughter, who was shocked by her mother's condition. "Her sentences were choppy, and she had developed well-formed delusions or fixed false beliefs," says Dr. Saraon. For instance, Kaur was convinced her daughter was keeping things from her, which was hurtful to Dr. Saraon even though she understood delusions are part of the medical condition. It was the disease talking, not her mom.

WHAT ARE ADLS AND IADLS?

The ongoing ability to complete these activities makes it possible to live on one's own.

Activities of Daily Living (ADLs)	Instrumental activities of daily living (IADLs)
Dressing	Paying bills, managing finances
Eating	Managing medications
Toileting	Doing meal preparation, laundry
Bathing/grooming	Driving or arranging transportation
Walking (independently or with a device)	Using communication devices (computer, phone)

+ Continue the story online. Meet others who are caregivers at work and at home: bit.ly/DualCaregivers

A PATIENT NOW, YET THERE IS JOY

Despite her mother's decline, Dr. Saraon maintained hope. "I thought, 'I can fix it. I've studied this.'" But to do so, she needed to switch her approach and view Kaur as a patient rather than her mother.

"I started seeking help from my colleagues to put her on medications to reduce anxiety associated with delusions," says Dr. Saraon.

While the medication helped with anxiety, Kaur's condition worsened. Prior to her diagnosis, she had been an avid reader and enjoyed word search games on her phone. By 2022, she was unable to talk or write, and her balance was failing, which made walking unsafe. She struggled dressing and feeding herself and developed left-side apraxia or difficulty with intentional movements. Kaur moved into her daughter's home in Las Vegas. And her daughter continued to enlist the support of her colleagues, getting advice from a movement disorders specialist regarding the apraxia, and a neuropsychiatrist regarding the behavioral changes.

"For individuals with FTD with PPA, the timeline from diagnosis to losing language skills completely is five years, and that's precisely what happened to my mom" says Dr. Saraon, who understands what the future holds. The average life expectancy is eight years from diagnosis.

Despite the prognosis and Kaur's limitations, Dr. Saraon is thankful for the opportunity to spend time with mother.

"Now, sometimes when I pick her up, she produces some sounds as if she's saying 'baby,' which is what she used to call me when I was little," says Dr. Saraon. "Occasionally, she looks into my eyes and is present. That's my happy moment."

Music Therapy: MISSION-DRIVEN, DONOR SUPPORTED

To participants in an afternoon music therapy session, the smiling young man, arms draped with tattoos, may have looked unfamiliar. But the song, “Cool,” he strummed on his guitar and sang with them became a grin-inducing, dancing favorite for many.

Country music artist Jay Allen enjoyed connecting with those living with memory loss and their families who gathered at Cleveland Clinic Lou Ruvo Center for Brain Health to experience the power of music. He was in Las Vegas to perform at the Power of Love® gala, helping raise funds so the center can expand the number of lives touched by programs such as music therapy.

It’s a forceful experience the 37-year-old singer/songwriter, who competed on “The Voice,” shared with his beloved late mother Sherry Rich, who was diagnosed with early-onset Alzheimer’s disease at the age of 51 and passed away from the disorder at age 54 in 2019.

Research has repeatedly shown music — and more specifically, music therapy — can help improve brain function. It’s a key component of the Lou Ruvo Center for Brain Health’s efforts to treat patients with Alzheimer’s disease, dementia and other neurological disorders.


“In the face of significant cognitive decline that’s typical in people with Alzheimer’s, musical memories are, broadly speaking, very well-preserved,” explains Lucille Carriere, PhD, director of the center’s Behavioral Health Program and Angie Ruvo Endowed Caregiving Chair. “Music therapy is one of the most powerful interventions we can offer, even when other therapeutic services may no longer be beneficial.”

And it’s advocates like Jay who help give voice to the greater purpose. “I want people to know they’re being heard, and they’re not alone,” says Jay. He notes the

biggest struggle he faced related to a loved one being diagnosed with Alzheimer’s disease is the role reversal as a caregiver — fighting for the person who nurtured and fought for you.



^ Jay Allen, center, inspires dancing among music therapy participants

 Continue the story online:
clevelandclinic.org/JayAllen

MUSIC THERAPY PROGRAMS ARE FREE THANKS TO GENEROUS DONOR SUPPORT.

Visit clevelandclinic.org/NevadaEvents for a calendar of ongoing music therapy programs, which include:

RHYTHMIC REHABILITATION

Use music, rhythm and instruments as part of a functional group exercise routine.

MINDFUL MUSICKING

Engage in “musicking” through movement, singing, playing instruments and active listening, with opportunity to exercise cognition and interact with others.

VIRTUAL THERAPEUTIC MUSIC FOR BRAIN HEALTH

Connect through listening to and singing music together, from the comfort of home.



^ Former Lieutenant Governor and Lou Ruvo Center for Brain Health supporter Lorraine Hunt Bono donated performance space at her Copa Room at The Bootlegger for Jammin’ With The Jazz Society. The special music therapy event was facilitated by Lou Ruvo Center for Brain Health music therapist Julie Renato, MM, LPMT, MT-BC, pictured here on stage. The May 21, 2024, event was open to the center’s patients and members of the Las Vegas Jazz Society.

Driving: **STOP OR GO TIME?**

In a September 1997 article entitled, “The elderly driver: What physicians need to know,” *Cleveland Clinic Journal of Medicine* reported:

Driving has become a symbol of freedom and self-expression, closely linked to our sense of independence and self-esteem. Persons who must give up driving often feel a loss of autonomy, particularly if the decision is involuntary. For some, the psychological impact of losing their driving privileges is devastating — much more damaging than that which might result from the coexistent awareness of restricted physical mobility.

More than 25 years later, driving among the elderly remains a concern, and even more so among those with dementia.

Various age-related conditions, including reduction in vision or hearing, arthritis, neuropathy in hands or feet, sleep disorders and over-medicating, can challenge even the most capable drivers. Factor in changes related to cognitive decline — such as visual-spatial problems, getting lost in familiar places, impulsivity, poor judgement and self-awareness — and driving can become unsafe more quickly than you might anticipate.

“As occupational therapists, we specialize in helping individuals maintain independence in activities of daily living and instrumental activities of daily living, and driving is part of that conversation,” says Madisen Mendez, MOT, OTR/L, Manager, Neurorehabilitation.



According to the National Highway Traffic Safety Administration, as the U.S. population 65 and older has grown, the proportion of licensed drivers 65+ has also risen, from 14% in 2001 to 21% in 2021. The proportion of fatal crashes involving older drivers follows a similar trend, rising from 11% in 2001 to 19% in 2021.

YET, TURNING IN YOUR KEYS REMAINS DIFFICULT

“Close friends and families are the best observers of changes in driving habits,” says Mendez (*see sidebar*). “Consider this: If you wouldn’t feel comfortable allowing your child to ride with the person, for everyone’s safety, it’s time to have the difficult conversation.”

Also, be on the lookout for changes in more complex instrumental activities of daily living (e.g. difficulty paying bills, forgetting to take medication), which can be a warning sign for decline in fitness to drive.

She suggests starting by asking a loved one how their drive went while running errands or visiting a friend. Then, share specific concerns from recent experience as the passenger, such as, “When you took that lefthand turn in front of oncoming traffic and I heard lots of horns honking, I felt _____ ... And I’m worried you’re going to get in an accident that might hurt you or someone else.”

IT’S PRO TIME

Sometimes, it’s best to let a professional “be the bad guy,” says Mendez. Consider asking an occupational therapist, neurologist or primary care doctor to talk with your loved one and suggest they think about what would happen if they had an accident — even if it wasn’t their fault — and a diagnosis of cognitive decline was revealed. A medical provider can also order a driving assessment,

which can place the decision in a third party’s hands. Or perhaps you have a good working relationship with a family legal advisor, who can share the “what ifs” around being sued for money or important family assets.

“Regardless of which approach you choose,” says Mendez, “be prepared to have the important driving conversation more than once. And if necessary, consider interim strategies to prevent driving altogether, such as hiding the keys or removing the car’s battery.”

To make an appointment with a Cleveland Clinic provider, contact us at 702.483.6000.

Warning signs that driving is becoming unsafe: Have you experienced any of these?

- Confusing gas and brake pedals
- Riding the brake, driving unnecessarily slowly or stopping in moving traffic
- Decreased confidence or increased agitation or distraction while driving
- Honking from other drivers
- Drifting between lanes or into oncoming traffic
- Failure to notice or obey common traffic signs
- Trouble making turns or entering/exiting a highway
- Delayed response to unexpected situations
- Getting lost in familiar places
- Difficulty parking or backing into a marked space
- Scrapes or dents on car or nearby objects (curbs, garage walls)
- Accidents or near misses



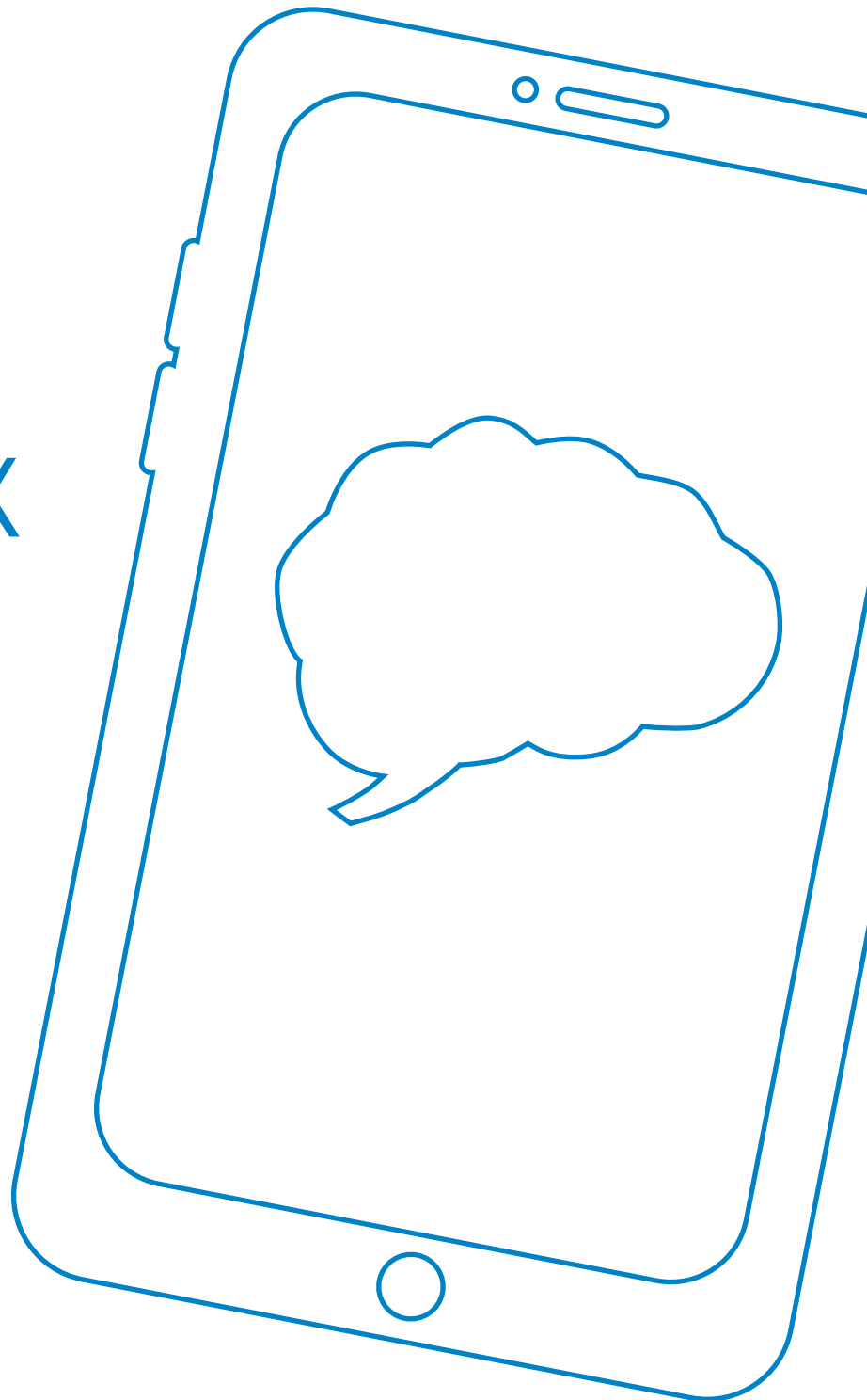
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Endowing the Future of **THEIR NEW COMMUNITY**

When asked if a friend or family member's battle with a neurological condition inspired their gift to Cleveland Clinic Lou Ruvo Center for Brain Health's endowment fund, Cassandra Hazen quickly replied, "We give in honor of society as a whole."

Husband Paul Hazen agreed. While raising three sons in California, the couple stressed the importance of "taking care of your home base, your community where you live." They challenged their children to think about actions each could take to support and sustain their community well into the future.

Since buying a house in Las Vegas in 2020, the city has become Cassandra and Paul's new community. Their first introduction to Cleveland Clinic was attending the Power of Love® gala (see page 25) as guests of a friend, and they were impressed by the generosity in the room. "It was nice to realize the community we moved to was so philanthropically oriented," says Cassandra.



^ Cassandra and Paul Hazen

Later, while touring the Lou Ruvo Center for Brain Health, Paul says they were struck by the expertise of the clinicians and researchers.

"We want to be part of expanding Cleveland Clinic and the spectrum of high quality care it can deliver here in Las Vegas," says Cassandra.

You, too, can be part of better brain health in our community

Cleveland Clinic is committed to growing Nevada's neuroscience landscape with support from a \$100 million endowment campaign to provide long-term sustainability.

Collectively, gifts of all sizes make an impact in Nevada, and 100% of your generous contribution to the endowment will sustain our future. At present, we're 43% of the way to our endowment goal. With your help, we will disrupt neurological diseases, saving and changing lives for generations to come.

Contact us to discuss your gift:
DonateNevada@ccf.org or
702.263.9797.



"We're so proud of how the center that bears my father's name has impacted clinical research, care and education in its first 15 years. **Now, we need our community to rally and join us in establishing sustainable support for the future.**"

– Larry Ruvo, Chairman and Co-Founder of Keep Memory Alive in support of the Lou Ruvo Center for Brain Health, pictured here with wife and Co-Founder, Camille

Reimagining Healthcare FOR WOMEN

A June 2024 survey from Parade magazine and Cleveland Clinic found that across the gender and age spectrum, when celebrities are willing to share their personal experiences with brain health issues, it has an impact. More than half of adults (56%) say that the stories of celebrities and personalities who have dementia inspire them to learn more about the ways to protect their brain health.




^ (L - R): Pelin Batur, MD, Maria Shriver, Beri Ridgeway, MD, and Jessica Caldwell, PhD, officially open the Women's Comprehensive Health and Research Center on April 17, 2024

Maria Shriver has been sharing her family's story since 2003, when her father, Sargent Shriver, was diagnosed with Alzheimer's disease, a condition about which she and her family knew very little. Putting her skills as an award-winning journalist and best-selling author to work, Maria Shriver has since become one of today's most internationally recognized Alzheimer's advocates and a force behind getting the disease recognized as a women's issue. Today, she serves as Founder of the Women's Alzheimer's Movement (WAM) Prevention and Research Center at Cleveland Clinic and Chief Visionary and Strategic Advisor, Cleveland Clinic Women's Comprehensive Health and Research Center.

The relationship with Cleveland Clinic started in 2016 when WAM began funding research into women and Alzheimer's disease. It expanded in 2020, when the Women's Alzheimer's Movement Prevention and Research Center at Cleveland Clinic (clevelandclinic.org/wamprevention) opened on our Las Vegas campus as the first and only center in the nation dedicated to providing women sustainable approaches for healthy lifestyle modification. The center embraces peer-reviewed science, which indicates that up to 45% of Alzheimer's cases might be preventable through risk reduction.

Fast forward to April 2024, and what began as an "only in Vegas" collaboration

 Continue the story online and learn more about women's health: health.clevelandclinic.org/what-is-womens-health

[Continue the story online: clevelandclinic.org/ConsultqdWAMgrants](https://clevelandclinic.org/ConsultqdWAMgrants)

with Shriver has grown into a formal partnership. Cleveland Clinic launched its Women's Comprehensive Health and Research Center (clevelandclinic.org/caringforwomen), an initiative dedicated to helping women during midlife and beyond thrive and easily receive the specialized care they need. Located on Cleveland Clinic's main campus in Cleveland, Ohio, the center is focused on four key areas: access, connectivity, education, and research and innovation to empower women to navigate their health journey with confidence and clarity.

Shriver will continue to leverage her expertise and influence to further the conversation on women's health.

"Maria's unwavering commitment to raising awareness and driving meaningful change aligns perfectly with the mission of our new center," said Tom Mihaljevic, MD, Cleveland Clinic CEO and President, and Morton L. Mandel CEO Chair. "Her passion for advancing the quality of care for women is remarkable and will help us transform how we deliver care for women today and into the future."

It's increasingly well recognized that many aspects of Alzheimer's disease (AD) differ between men and women. Some of those differences call for approaches to AD research specific to women, and that's the impetus behind the research grant program of the Women's Alzheimer's Movement at Cleveland Clinic, a pioneering organization devoted to advancing gender-based research, treatment, disease prevention and education for brain health.

In April, WAM at Cleveland Clinic announced the four recipients of its

2024 research grants, including Jessica Caldwell, PhD, Director, WAM Prevention and Research Center at Cleveland Clinic. Three of the four newly funded projects are aimed at understanding how Alzheimer's disease affects men and women differently.

"In science, gender inclusion in studies isn't just a human rights issue; it's crucial for relevant and effective research so we can arrive at more effective healthcare for women," says Shriver.



^ Awareness of brain health is growing, but many are too afraid to seek help, Parade/Cleveland Clinic survey finds.



^ Results also show that while women are more concerned than men about developing Alzheimer's or dementia, they don't recognize they are at greater risk.

Philanthropy Funds MS RESEARCH

Up to 65% of people with multiple sclerosis (MS) experience disease-related cognitive impairment. Despite decades of research, little is known about cognitive issues among elders with MS (EwMS; individuals aged 60+). Curiosity — and some philanthropic funding — prompted Le Hua, MD, Director of the Mellen Program for Multiple Sclerosis at the Lou Ruvo Center for Brain Health, Las Vegas, to investigate.

In February 2024 at the ACTRIMS Forum, a leading conference for MS clinician-scientists, Dr. Hua presented findings from a study on which she served as the senior author. “Comparing Cognitive Profiles in Older Adults With Multiple Sclerosis and Alzheimer’s Disease: More Similarities Than Differences” compared EwMS to those experiencing cognitive impairment due to Alzheimer’s disease confirmed by indicators of disease, known as biomarkers.

The results suggested that distinguishing between the cognitive effects of MS and Alzheimer’s diseases at more severe levels of cognitive impairment may be less reliable than once thought. Future work to replicate these findings more broadly and deepen the understanding of cognition in older individuals with MS is needed — and so is more funding.

FUNDING A SEAT AT THE RESEARCH TABLE

Funding for studies such as Dr. Hua’s is made possible by private donors like Mark Davis, Keep Memory Alive board member and owner of the Las Vegas Raiders, and Keep Memory Alive Co-Founders Camille and Larry Ruvo. On March 21, 2024, Dr. Hua was introduced as the Raiders Foundation and Ruvo Family Endowed Chair for Multiple Sclerosis in Memory of David Humm, and formally presented with the traditional black commemorative chair.

The endowed position, announced at the 2023 Power of Love® gala, is in memory of former Raider football player David Humm, who died of complications from MS in 2018.

An endowed chair is a gift that keeps on giving: Its principal is managed in perpetuity by Cleveland Clinic’s investment office, while its investment income is made available annually to the chair holder to explore ideas that could ultimately lead to enhanced treatment and a cure for MS.

Your generosity today can impact patients and brain science well into the future. Learn how you can fund innovation: DonateNevada@ccf.org or 702.263.9797.



^ Larry Ruvo introduces Mark Davis at the Chair ceremony



^ (L - R): David Humm’s siblings Tom Humm, Lori Humm and Cathy Humm DeValliere with Dr. Le Hua, center



^ Three iconic Nevada landmarks, the Welcome to Las Vegas Sign, Reno “BELIEVE” sign and the Keep Memory Alive Event Center, were illuminated orange — the color of MS awareness — in recognition of Nevada’s inaugural MS Week, March 18-22, 2024.



Marching forward on behalf of Nevadans living with MS

Current research indicates that individuals with multiple sclerosis will have less disability if they are receiving treatment. Dr. Hua notes that “even a five-year delay from diagnosis to treatment has a significant negative impact on wellbeing.” Yet, one of the greatest barriers to seeking a diagnosis and care is awareness.

That’s why Cleveland Clinic Lou Ruvo Center for Brain Health proudly supported Nevada SB-286, the “David Humm” bill. Signed into law in July 2023 by Gov. Lombardo, SB-286 recognizes the third week of March as Multiple Sclerosis Awareness Week. In this way, David Humm — the Original Las Vegas Raider who died of MS in 2018 and was honored posthumously at our 2023 Power of Love® gala — continues to make a lasting impact in his hometown of Las Vegas and on Nevada’s only Comprehensive Center for MS Care (see page 5).

Is Aging a Disease?

“Our society is very ageist,” says Andrew Bender, PhD, a neuroscientist at Cleveland Clinic Lou Ruvo Center for Brain Health.

When we observe cognitive slips — misremembering, repeating stories, mixing up names — we tend to attribute them to getting older as opposed to simply being human and susceptible to other factors like sleep deprivation or brain fog from an infection, such as the flu, the common cold or COVID-19.

Dr. Bender occasionally enjoys flipping through a medical textbook from 1922 that refers to dementia as senile insanity or delirium, which he says is a “great reminder that we used to think of dementia and all age-related cognitive impairments as the same thing.”

It’s only recently that specialists have begun to differentiate among the breadth of dementias, such as Lewy Body dementia, Alzheimer’s disease or the multiple variants of frontotemporal dementia, including aphasia (see page 13).

RECOGNIZING WHAT WE DON’T KNOW

“In the brains of people with Alzheimer’s disease, it’s common for additional pathologies to co-exist. However, since we don’t have PET imaging biomarkers or identifiers for each dementia, we don’t know if one type progresses to another, or if they happen in parallel,” he says.

More research is needed to better understand the nuances of cognitive decline: Mild cognitive impairment (MCI) is not disease-specific and doesn’t always advance to dementia. Today, many of the cases from which we have data on MCI are those progressing to Alzheimer’s disease, the most common

of the dementias. “We haven’t yet had enough time or funding to study possible progression to many other types of dementia,” says Dr. Bender.

ASSORTED FACTORS CAUSE A VARIETY OF DAMAGE

Moreover, it’s possible some age-related changes in cognition might be driven by pathological processes involving beta-amyloid or non-clumping tau proteins. This can be damaging even without accumulating into the plaques and tangles that must be present to earn a diagnosis of Alzheimer’s disease.

“Not all brain changes are abnormal. Changes you observe in yourself or a loved one may be what we think of as age-related cognitive decline,” he says.

The aging process can be impacted by additional factors, such as diabetes, high blood pressure, obesity or increased chronic inflammation. Treating these conditions has the potential to reduce disease processes in individuals — or at least reduce the contributing factors.

So back to that question:
Is aging a disease?

“Well,” says Dr. Bender, “a physician’s job is to diagnose disease. Because age-related cognitive decline isn’t currently considered a disease, it’s more likely to go undetected.”

He adds, “While there’s still a lot we don’t know, that 1922 medical textbook is a wonderful reminder of how far our understanding of cognitive aging and dementia has come in the past 100 years.”



Dr. Andrew Bender, recipient of Cleveland Clinic’s 2023 Emerging Scientist Award

A centerpiece of Dr. Bender’s work is his study of cognitive resilience — the concept that some individuals, despite having neuropathological features of Alzheimer’s disease, do not exhibit cognitive impairment. His goal is to find neuroimaging biomarkers that can predict cognitive resilience, facilitating early intervention, personalized treatment and monitoring the effects of treatments.

The Emerging Scientist Award Program at Cleveland Clinic supports neurological researchers who are pioneering novel projects and investigating disease-altering therapies. You can support their innovation. Contact us at DonateNevada@ccf.org or 702.263.9797.

Super Science: LAS VEGAS' FIRST "BIG GAME"

Las Vegas hosted its first Super Bowl in February, and Cleveland Clinic Lou Ruvo Center for Brain Health seized the opportunity to talk with a national audience about brain health as a lifelong sport.



^ Dr. Charles Bernick, left, with Lawrence Ayers

BLACK MEN'S BRAIN HEALTH CONFERENCE

On our campus, we hosted the pre-conference for the Black Men's Brain Health Conference — an annual event held in the host city the week before the big game. The conference aims to increase the number of Black men participating in brain research through mentorship and advocacy.

Lou Ruvo Center for Health caregiver Lawrence Ayers, MPH, MBA, a program manager in financial affairs, played a pivotal role in coordinating the pre-conference, which was a full-circle moment for him. In 2022, he had attended the inaugural Black Men's Brain Health Conference to learn about emerging research, connect with other leaders in the field and inspire future involvement. Since then, the conference has expanded into a multi-day gathering attracting hundreds of attendees.

"I'm happy to know my workplace supports something like this. For me, it signals that our center is a welcoming place for minorities, in particular Black men. We know there are stigmas around

brain health, but we're showing we are a place that will support you," Ayers says.

LEIGH STEINBERG SUPER BOWL PARTY AND BRAIN HEALTH SUMMIT

This 30-year event is the brainchild of Leigh Steinberg, legendary sports agent and inspiration for the movie Jerry Maguire. The glittering extravaganza brings together people from sports, Hollywood, politics and the media to learn from and talk with leading neuroscientists, mental health experts and celebrity advocates.

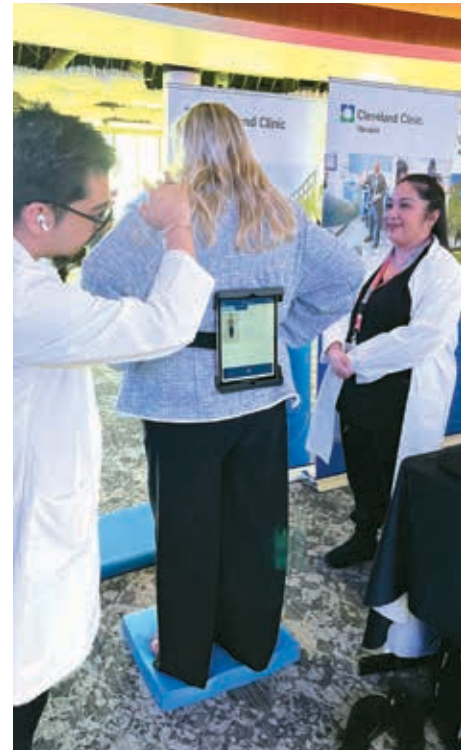
From physical performance to mental health and social connections, sports are good for overall health. Yet, repeated head impacts can jeopardize brain health. Since 2011, the Lou Ruvo Center for Brain Health's Professional Athletes Brain Health Study has been looking at risk factors, but also learning more about resilience, empowering athletes with information to make proactive decisions for their own brain health. The study's principal investigator, Charles Bernick, MD, MPH, moderated a panel, The Future of Elite Performance.

BEYOND THE "BIG GAME": LAS VEGAS RAIDERS ALUMNI WELLNESS WEEKEND

Since relocating the Raiders to Las Vegas in 2020, the team's owner and Keep Memory Alive Board Member, Mark Davis, is making sure football — and brain health — are top-of-mind year-round.

To help achieve that goal, Dr. Bernick and Lucille Carriere, PhD, director of the center's Behavioral Health Program and Angie Ruvo Endowed Caregiving

^ Using one of the assessments from our Professional Athletes Brain Health Study, study coordinators Rigo Palomino and Diana Jimarez test a guest's balance in the Brain Health and Biohacking Lounge.



Chair, spoke on June 8, 2024, at the Las Vegas Raiders first Alumni Wellness Weekend. Addressing retired players' spouses, Dr. Bernick provided education about the long-term effects of repeated head impacts: "When you notice changes in personality or cognition, don't assume the worst. Early intervention is your best defense. Take action, and get it checked out with a neurologist."

Dr. Carriere shared findings from a survey of retired players' spouses and discussed care partner support strategies tailored to this unique population.

Love Powers Year-Round Support FOR CAREGIVERS

Keep Memory Alive honored country music sensation **Blake Shelton** at the 27th annual Power of Love® gala on Friday, May 10, 2024, at MGM Grand Garden Arena in Las Vegas.

Keep Memory Alive co-founders Camille and Larry Ruvo welcomed 1,500 guests, with Camille sharing the purpose behind the party: “Before there is a cure, there is a caregiver. A topic we rarely think about, yet it is more prevalent than we realize. Each day at Cleveland Clinic Lou Ruvo Center for Brain Health, a patient is diagnosed with a neurodegenerative disease such as Alzheimer’s, Parkinson’s and multiple sclerosis. And standing beside them facing this life-changing reality is a caregiver.”

An esteemed lineup of entertainers came together to raise funds for patient and family caregiver programming at the Lou Ruvo Center for Brain Health and celebrate Shelton, including **Gwen Stefani, Jay Allen, Colbie Caillat, Kristin Chenoweth, Andy Grammer, Mickey Guyton, Gary LeVox, Cassadee Pope** and **Jay Pharoah**.

Pharoah treated the audience to a side-splitting comedy set before the musical performances kicked off featuring a mix of original and renditions of Shelton’s songs. The night culminated in Shelton taking the stage to perform “Sangria,” “Ol’ Red” and leading the crowd in a rousing rendition of “Sweet Caroline” from Neil Diamond, the 2020 Power of Love honoree. Stefani then joined her husband, Shelton, for the closing duet “Nobody But You.”



^ Gwen Stefani and Blake Shelton

Chefs Wolfgang Puck and Evan Funke prepared the gourmet dinner, paired with wines from Southern Glazer’s Wine, Spirits & Beer of Nevada, followed by a dazzling dessert display from the MGM Grand pastry team.

CONNECTING WITH THE CAUSE

Our fundraising events are most memorable when the stars on the stage truly connect with the Lou Ruvo Center for Brain Health’s mission (see sidebar), and the 2024 Power of Love was no exception. Jay Allen delivered a moving rendition of his viral hit song “Blank Stares” inspired by his mother’s battle with Alzheimer’s disease (see page 15). Shelton got into the live auction action, bidding and winning a walk-on role in a Mark Wahlberg movie and later joking that he was a movie star.



^ Kristin Chenoweth and Jay Pharoah

➕ Continue the story online. Watch highlights from the 2024 Power of Love. bit.ly/PowerofLove2024

THANK YOU SPONSORS



Moët Hennessy USA





^ Mickey Guyton



^ Andy Grammer



^ Colbie Caillat



^ Cassadee Pope with Gary LeVox



THE ESTEFANS MARK 10 YEARS OF SUPPORT

When honored at the 2014 Power of Love® gala, Gloria and Emilio Estefan gave a gift that launched the Major José M. Fajardo Patient Services Program in honor of Gloria's father, who suffered from multiple sclerosis (MS) that he developed during his service in Vietnam.

As a caregiver for her father at the end of his life, Gloria has firsthand experience of the compelling need for a comprehensive approach to MS treatment to help patients and their families. That's why she and Emilio continue to provide funding to sustain the Fajardo Program.

In 2023, the year the Estefans expanded their support, Cleveland Clinic Lou Ruvo Center for Brain Health provided:

- 50 yoga sessions to 445 participants.
- 28 MS support group sessions to 160 participants.
- 400 counseling sessions to 157 unique patients.
- 446 free rides for medical, rehabilitation and counseling visits to 292 people with MS.
- Case management services to more than 325 unique individuals to address the psychosocial challenges of living with MS.

If you're interested in supporting programming for families living with neurological disorders, contact us at 702.263.9797 or DonateNevada@ccf.org.

Dedicated Collaborators Host Events to **SUPPORT BRAIN HEALTH**

GATHERING FOR GOOD

The brain is the body's ultimate organ, the very essence of our being. Yet we don't know why some brains get sick and others stay healthy. Answering this question is the key to preventing, treating and curing neurological diseases.

Support from generous donors plays a crucial role in our research and development efforts to better understand the causes, mechanisms and potential treatments for neurological diseases. That's why long-time Cleveland Clinic donors and 1921 Society members Sue and Sandy Schwartz convened a group of like-minded individuals in their Las Vegas home.

Leaders from Cleveland Clinic's Neurological Institute led an informal conversation, sharing with guests how Cleveland Clinic is progressing toward its disruption of brain disease. The evening's theme was sharing our passion to change the course of human health by curing brain diseases in our lifetimes.



^ (L - R): Hosts Sandy and Sue Schwartz, Dr. Andre Machado and Dylan Wint, MD, Medical Director, Cleveland Clinic Nevada



“Either we invest in research, treatments and cures today or we build more nursing homes tomorrow.”

– **Andre Machado, MD, PhD**
Charles and Christine Carroll Family Endowed Chair in Functional Neurosurgery Chair, Cleveland Clinic's Neurological Institute

LAGOS KEEPS MEMORY ALIVE COLLECTION



“Ask a person about an item of jewelry they’re wearing, and they’ll tell you a story,” says Steven Lagos, Founder/Creative Director of LAGOS and long-time

supporter of Cleveland Clinic Lou Ruvo Center for Brain Health.

Lagos has first-hand experience with memorable moments fading, as both his grandparents developed Alzheimer’s disease. Seeing the toll that brain disease was taking in his own family, he resolved to blend his life’s calling — the design of fine jewelry — with a commitment to improving the lives of

those affected by Alzheimer’s disease. Since 2015, LAGOS produced an exclusive Sterling Silver Signature Caviar collection, inspired by the intricate curvature of Keep Memory Alive’s Frank Gehry-designed headquarters.

100% of your purchase from the LAGOS Keep Memory Alive collection benefits Cleveland Clinic Lou Ruvo Center for Brain Health.

[LAGOS.com/keepmemoryalive](https://www.lagos.com/keepmemoryalive)



CHEERS TO 20 YEARS: PUTTING THE ‘FUN’ IN FUNDRAISING

Each summer in Mesquite, Nevada, Phins to The West, a fun-loving and generous group of Jimmy Buffet fans — affectionately known as “Parrot Heads” — hosts a weekend of “Phun, phamily, philanthropy” to raise funds for Cleveland Clinic Lou Ruvo Center for Brain Health as bands cover Buffett’s iconic repertoire.

While the group of Parrot Heads has supported Keep Memory Alive for the last 13 years of the event’s 20-year run, 2024 marks the end of this cherished relationship and Phins to The West.

The event has been organized entirely by volunteers, says Alan Conklin. Since co-founding Phins to The West, he

and Doug Murray have also served as co-chairs. Both are now retired, and Doug has moved to Mexico, where he serves as a full-time caregiver to his wife following a stroke.

“We’re so proud that Phins to The West has been able to raise more than \$250,000 to support caregiving programming at Cleveland Clinic Lou Ruvo Center for Brain Health,” says Doug. “Being in the thick of it myself, I know first-hand the importance of caregiver education and support.”

Cheers to you, Doug, Alan and all the Phins. We appreciate your care for caregivers!



^ (L - R): Renae DeLucia, Alan Conklin, Verla Niebuhr, Tawnya Caldwell, LMSW, Tiarra Atkinson, LCSW, Judy Wall and Doug Murray

Giddy Up for Good

On June 29-30, 2024, guests gathered on the shores of Lake Tahoe for Keep Memory Alive's annual Summer Festival & Rodeo. The event never fails to deliver on its promise of "a rootin'-tootin' good time!" with bulls, bucks, barrels and barbeque.

This year, guests enjoyed an elegant dine-around experience by James Beard Award-winner Chef Luciano Pellegrini. Each station featured exquisite food paired with the most sought-after wines and spirits in the world. The festivities concluded with a private performance by rock legends Rick Springfield and Richard Marx.



^ Rick Springfield



^ Richard Marx

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Foundation**



HIGH GROUND
ESTATE VODKA



Profit Recovery Partners, LLC
PROFESSIONAL ENGINEERING RECOVERY SOLUTIONS



FFW
FOLEY FAMILY WINES
Real Vineyards. Real Wineries. Real Wines.



**TW TRADEWIND
PROPERTIES**



**Jackson
FAMILY WINES**



PATRÓN
TEQUILA



FREY RANCH
FARMERS + DISTILLERS



Corona



BATTLE BORN BEER



FERRARI-CARANO
Vineyards and Winery



Stoli



Modelo



**Barton
Health**

The Beelar Family

John & Cristi Milazzo

Julie & Michael Teel

Friends of Glenbrook

Maryanne Sangiacomo

The Ruvo Family

∨ Supporters gather for dinner at Shakespeare Ranch



Philanthropy Impacts Community

KEEP MEMORY ALIVE COMMUNITY LEADERSHIP AWARD HONOREES



2024 Honoree: Kern Schumacher

Larry Ruvo, right, addressed the crowd gathered at the Summer Festival & Rodeo saying of the gentleman next to him: “Please join me in honoring our dear friend, Kern Schumacher, with the Keep Memory Alive Community Leadership Award. Schumacher is a dedicated philanthropist, driven by a desire to make a positive impact on various aspects of human life from education and healthcare to community development to environmental conservation and the arts, and of course especially important to all present, Cleveland Clinic Lou Ruvo Center for Brain Health.”



2023 Honoree: Bob Davidson

During a Spring 2024 visit to our campus, Bob Davidson was honored once again for his generous support of Cleveland Clinic Lou Ruvo Center for Brain Health. Previously, Davidson had been honored at the 2023 Summer Festival for his impact on Nevada as founder of The Davidson Institute for the Profoundly Gifted in Reno, which includes the Davidson Young Scholars program, the Davidson Fellows Scholarship and the Davidson Academy, a public school, located on the campus of the University of Nevada, Reno.

THE IMPACT OF DONATIONS FROM THE SUMMER FESTIVAL & RODEO

Emerging Scientist Award Program

Guest Michael Milken inspired those in attendance to step up and fund seven three-year Emerging Scientist Awards, seeding a lifetime of return on investment as our scientists translate their early learning and support into a career of neurological advances (see page 23). Since its inception in 2016, the program has achieved these milestones:

- More than \$4.3 million raised to support this innovative program.
- Emerging Scientists have presented at over 65 national conferences.
- 239 scientific papers published.
- \$26 million secured in external funding by Emerging Scientist alumni.



∧ Michael and Lori Milken

Visitor Photo Gallery



^ Chef José Andrés



^ (L - R): Deborah Johnson, Omar Hanson, Anthony Dario Cabrera, Sean McBurney, Donald Ross and Gilberto Revolorio of Caesars Entertainment



^ Sandra Douglass Morgan, President, Las Vegas Raiders



^ (L - R): Anthony Carideo, Steven Brody, Rob Santo Paulo and Antonio Portillo of Rémy Cointreau



^ (L - R): Meredith Marks, Dr. Lucille Carriere, and Chloe Marks



^ Michael Dermody



^ Larry Ruvo, left, with Don Campbell





^ Peter Bernhard



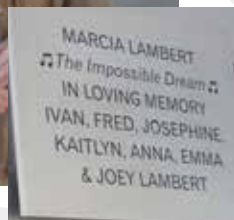
^ Dani and Ted Virtue



^ (L - R): Larry Ruvo, John Waldron and Dylan Wint, MD



^ (L - R): Joey and Fred Lambert with father, Ivan



^ Gardner family visit



^ Shawwna Nason represents San Manuel Cares



^ Carolyn Keith

Recognized for Excellence

In recent months, Cleveland Clinic Lou Ruvo Center for Brain Health staff have been honored by the community, peers and professional associations for clinical excellence and leadership in the field.

We celebrate these accomplishments.

Innovator Award, Healthcare Heroes

(Nevada Business Magazine, September 2024)

Charles Bernick, MD, MPH

President

(Clark County Medical Society, July 2024)

Zoltan Mari, MD

Lean Six Sigma Green Belt Certification

(The Council for Six Sigma Certification, June 2024)

Vicki Clarke

Christina Fifer

Nadia Fulkerson

Jennifer Sandoval

Kyle Underwood

Secretary, Executive Board of Governors

(Consortium of Multiple Sclerosis Centers, June 2024)

Carrie Hersh, DO, MSc

2024 Regents Award

(American College of Healthcare Executives Ohio, June 2024)

Vicki Clarke

Lifetime Achievement Award, Vegas Inc's Health Care Headliners

(Health Care Quarterly, May 2024)

Charles Bernick, MD, MPH

Outstanding Site for Baseline Referrals and Baseline Compliance

(Parkinson's Progression Markers Initiative, Michael J. Fox Foundation, May 2024)

Cleveland Clinic Nevada

Center for Comprehensive Multiple Sclerosis Care

(National Multiple Sclerosis Society, May 2024)

Cleveland Clinic Nevada

(see page 5)

Award of Excellence, Most Effective Campaign on a Shoestring Budget, Silver Anvil Awards

(Public Relations Society of America, May 2024)

MacKenzie Ruta, APR

Community Impact Award

(Parkinson's Foundation Southwest Chapter, April 2024)

Jenny Nguyen, DNP, FNP-C

2024 Research Grant

(Women's Alzheimer's Movement at Cleveland Clinic, April 2024)

Young Investigator Award, Taylor Fama Levine, PhD

MOSH /WAM Award, Jessica Caldwell, PhD

(see page 19)

Certificate of Achievement, Vestibular Rehabilitation: A Competency-Based Course

(Duke University and American Physical Therapy Association, March 2024)

Kameron Jacobson, PT, DPT, NCS

Best in Show, Pinnacle Awards

(Public Relations Society of America, Las Vegas Valley Chapter, January 2024)

MacKenzie Ruta, APR

Nicole Wolf, APR

Top Doctors

(Castle Connolly, 2024)

Charles Bernick, MD

Le Hua, MD, FAAN

Zoltan Mari, MD, FAAN

**Dylan Wint, MD; also recognized among the
Castle Connolly Top Black Doctors**



Charles Bernick, MD



Le Hua, MD, FAAN



Zoltan Mari, MD, FAAN



Dylan Wint, MD



STUDY OF THE BRAIN'S RESPONSE TO MEMORY TASKS SUPPORTED BY A \$1.5 MILLION NIH GRANT

Cleveland Clinic Lou Ruvo Center for Brain Health is one of the few — if not the first and only brain center — to have the data analytics power of a brain imaging research team. Led by **Dietmar Cordes, PhD**, the team uses robust analysis to translate our clinician-scientists' insight into publish-able, actionable data that can be shared with the scientific community.

A continuation of his current RF1 grant, in March 2024, Dr. Cordes received a \$1.5 million R01 grant from the National Institutes of Health. His research project uses advanced brain imaging to study how different parts of the brain respond to memory tasks, with the goal of creating a test to diagnose and characterize memory problems in people at risk for Alzheimer's disease.

ZOLTAN MARI, MD, ASSUMES PRESIDENCY OF CLARK COUNTY MEDICAL SOCIETY

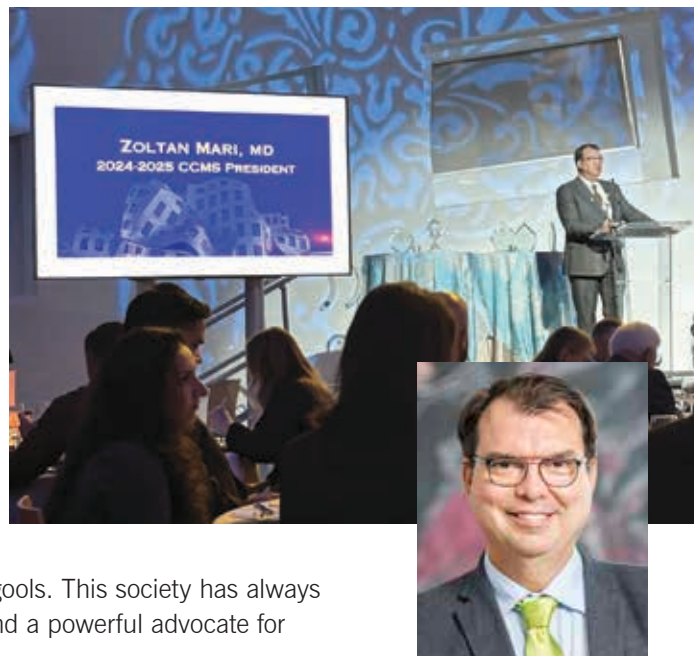
Only July 12, 2024, **Zoltan Mari, MD**, Director, Parkinson's Disease and Movement Disorders Program at Cleveland Clinic Lou Ruvo Center for Brain Health, was installed as the 70th president of the Clark County Medical Society (CCMS) on his home turf — the iconic Keep Memory Alive Event Center.

He shared with CCMS members and guests his ambitions for his presidency, notably:

1. Continue to foster a culture of innovation within the CCMS.
2. Bridge the gap between cutting-edge research and accessible, quality healthcare.
3. Address the looming physician shortage, particularly in our underserved areas.

"I stand before you confident that together, we can achieve these goals. This society has always been a beacon of progress, a platform for the exchange of ideas and a powerful advocate for patients everywhere," said Dr. Mari.

When asked what inspired him to seek the ultimate leadership role at CCMS, Dr. Mari said, "Serving as president of the Clark County Medical Society complements my work at Cleveland Clinic Lou Ruvo Center for Brain Health and aligns with one of Cleveland Clinic's priorities — caring for the community — by advocating for physicians and their patients in southern Nevada and encouraging the delivery of world-class healthcare within the community."



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POWER OF LOVE

save the date

SATURDAY, FEBRUARY 22, 2025
MGM GRAND GARDEN ARENA ♥ LAS VEGAS

Join us for dinner with **Chefs Thomas Keller and Wolfgang Puck**, fine wine and tantalizing cocktails, and an evening of superstar entertainment. Together, we will celebrate the Power of Love® and raise funds for Cleveland Clinic Lou Ruvo Center for Brain Health.



honoring
Jimmy Kimmel

Recognizing Lovee and
Bob Arum with the
Community Leadership Award