

# New Thinking

ABOUT THINKING

A Publication by  
Cleveland Clinic Lou Ruvo  
Center for Brain Health  
SPRING 2019

 Cleveland Clinic  
Nevada

KEEP MEMORY ALIVE  




**JOIN US ON MARCH 16!**

During a night of fundraising for Cleveland Clinic, we'll honor Lionel Richie for his iconic music and present Lonnie Ali with the Caregiver Hero Award. Tickets on sale now!

[keepmemoryalive.org/POL](http://keepmemoryalive.org/POL)

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

ALZHEIMER'S • HUNTINGTON'S • PARKINSON'S • FRONTOTEMPORAL DEMENTIA • LEWY BODY DEMENTIA • MULTIPLE SCLEROSIS • MULTIPLE SYSTEM ATROPHY

In the last edition of *New Thinking*, I introduced myself and provided background on how I landed at Cleveland Clinic Lou Ruvo Center for Brain Health in May 2018, during its ninth anniversary. I am mindful that I am the successor to the most recognized clinical authority on Alzheimer's dementia, bar none: Dr. Jeffrey Cummings. As the saying goes, his are big shoes to fill!



Marwan N. Sabbagh,  
MD, FAAN,  
CCRI, Director,  
Cleveland Clinic Lou  
Ruvo Center for  
Brain Health

That said, I could not be more excited to pioneer our next 10 years. What an opportunity to work at what I believe is the best place for treating and researching neurodegenerative diseases, with the brightest minds doing the best science. Indeed, this is a dream come true!

People have asked me, "What is your plan?"

In my first year, I wanted to earn more designations of excellence. In 2018, we:

- Became a Parkinson's Foundation Center of Excellence
- Were named a CurePSP Center of Care
- Became a Lewy Body Dementia Association Research Center of Excellence

These designations indicate that our peers recognize the Lou Ruvo Center for Brain Health as a leading authority in researching and treating brain disorders (see page 9). We continue to pursue NIH recognition, too, as a center of excellence in Alzheimer's disease.

### Toward the Future

The remainder of my first year has been dedicated to drafting a strategic plan that will map out our future. Both the Neurological Institute — of which our center is a part — and the entire Cleveland Clinic are undergoing a similar strategic planning process; ultimately, our plan will be

incorporated into the larger vision of Cleveland Clinic worldwide.

Our strategic plan has identified several pillars:

1. Innovation
2. Patient care
3. Education and outreach
4. Brand/name recognition
5. Regional growth
6. Capital needs
7. Financial sustainability

We strive to retain our uniqueness while contributing to the overall mission of clinical excellence and innovation.

Ultimately, our center's future is the legacy and vision of Keep Memory Alive Founders Camille and Larry Ruvo — initially realized by Dr. Cummings and now entrusted to me. The legacy we all want to achieve is executing discoveries that will improve the lives of patients suffering from Alzheimer's disease, Parkinson's disease, Huntington's disease, multiple sclerosis and other degenerative brain diseases.

This is what excites and drives me. I hope it motivates you, too, and I look forward to your participation in our future.

### Marwan N. Sabbagh, MD, FAAN

*Director, Cleveland Clinic  
Lou Ruvo Center for Brain Health  
Camille and Larry Ruvo  
Endowed Chair for Brain Health*

# New Thinking

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Cleveland Clinic Lou Ruvo Center for Brain Health

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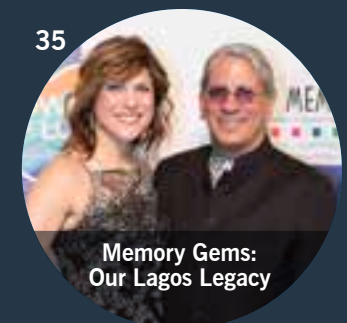
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# 2009 – 2019 : CELEBRATING 10 YEARS OF WORLD-CLASS CARE

We salute our team and the genuine care with which they interact with patients, families and our community. Thank you for an impactful 10 years. We look forward to a bright future together.



“Dementia is a long journey that Dr. Bernick and I have traveled with so many patients for

the last decade. Fortunately, many are still with us, but when family members call to inform us of a loved one’s passing, I, too, feel a loss.”

— Josie Gatbonton, Nurse



“As we’ve grown from 15 to 150 employees, I’ve enjoyed the intellectual stimulation provided by colleagues who

are experts in their field, constantly innovating new approaches to comprehensive care. Because of them, I know I’m giving my research and support group clients the most up-to-date information to better cope with the diseases affecting their families. At our center, we now offer so many resources. The diagnosis is just the starting point!”

— Donna Munic-Miller, Psychologist



“The feedback we volunteers receive from families is pretty tremendous. Patients arrive not

knowing what to expect, often frightened of the unknown. Meeting a friendly face is welcoming, non-threatening and even reassuring. Being here to help makes me feel really good.”

— Barbara Briscoe, Volunteer

Among the employees and volunteers who have walked through Cleveland Clinic Lou Ruvo Center for Brain Health’s doors since the center’s 2009 opening, there’s a sense of pioneering pride at having helped build a community of support for patients and families living with brain disorders.



## Since opening in July 2009, the Lou Ruvo Center for Brain Health has:

- Joined Cleveland Clinic, perennially one of the country's top five hospitals in *U.S. News & World Report's* annual ranking of best hospitals. In 2018-19, Cleveland Clinic was once again ranked the nation's No. 2 hospital; the neurology/neurosurgery program was named No. 4.
- Built one of the largest Alzheimer's disease clinical trials programs in the country, having conducted more than 70 research studies to advance new therapies for brain disorders toward FDA approval.
- Facilitated more than 2,000 study visits and recruited 671 new participants in a single year.
- Expanded beyond an original focus on Alzheimer's disease and memory disorders to attract specialty-trained physician staff in Parkinson's disease and other movement disorders and in multiple sclerosis.
- Facilitated more than 165,000 patient appointments with our medical providers. More than 5,000 lives are currently in our care, representing a total of more than 29,000 visits in a single year.
- Grown from two physician-scientists to 14 (who have published more than 525 scientific papers advancing the science of Alzheimer's and Parkinson's diseases, multiple sclerosis, neuropsychology, brain trauma and clinical trials) and from 18 employees to 160.
- Provided more than 41,000 visits to our no-cost caregiver and community education and social services support.
- Engaged a social work team that in a single year, provided more than 5,200 hours of one-on-one support in addition to 110 support group sessions and 1,000 encounters with music therapy.
- Provided more than 55,000 hours of pre-professional education to students spanning K-12 to medical residents.
- Hosted annual live continuing medical education conferences for more than 2,600 physicians and providers, with an additional 5,500 online views.
- Engaged volunteers to provide more than 107,000 unpaid hours of compassionate, welcoming support to patients and families.
- Launched HealthyBrains.org — an interactive website and app with more than 725,000 page views — where more than 20,000 global visitors have received a free online brain health self-assessment, signed up for a monthly e-newsletter or indicated an interest in participating in clinical trials research.
- Been the only program in Southern Nevada to receive the "Partners in Care" designation from the National Multiple Sclerosis Society and expanded our MS program with grants from the Conrad N. Hilton Foundation and Gloria and Emilio Estefan.
- Been named one of the first five CurePSP Centers of Care in the United States.
- Been named among the Cleveland Clinic locations of the Parkinson's Foundation Center of Excellence.
- Opened the only Huntington's Disease Comprehensive Clinic in Nevada.
- Earned a Research Center of Excellence designation from the Lewy Body Dementia Association.
- Established a fellowship in behavioral neurology and neuropsychiatry accredited by the United Council of Neurologic Subspecialties; the first fellow graduated in July 2016.
- Employed two of Southern Nevada's three physical therapists board certified by the American Physical Therapy Association as Neurological Clinical Specialists.
- Enrolled more than 820 professional fighters in a research study assessing the longitudinal impact of head trauma and secured research funding from top boxing and mixed martial arts promoters.
- Hosted Presidents Clinton and George W. and George H.W. Bush, as well as other leaders and luminaries, from Ret. Gen. Colin Powell and Nevada Sen. Harry Reid to talk show host Larry King and Nobel Laureate Stanley Prusiner.
- Hosted Regina M. Benjamin, MD, MBA, Surgeon General of the U.S., who advocated for increasing public health awareness of head trauma.
- Twice convened worldwide thought leaders to develop roadmaps for research into improved understanding and treatment: once for multiple system atrophy and again for frontotemporal dementia.
- Received major grants from the NIH, including a five-year, \$11.1 million grant to host a Center of Biomedical Research Excellence in collaboration with the University of Nevada, Las Vegas — the first such grant in Southern Nevada.
- Raised more than \$317 million through an integrated fundraising entity, Keep Memory Alive, to support care and advance progress toward a cure.



**"It's been a privilege to advocate on behalf of people who have lived long lives full of delightful stories.**

**Unfortunately, many have brain disorders that are stealing away those treasures. If I can help them preserve their inherent dignity and receive the care they deserve by educating others, I am happy. Working here has allowed me to live a life with purpose."**

**— LeeAnn Mandarino,  
Manager, Education**

# Get Ready to Witness the Power of Love

**Chef Wolfgang Puck**  
Credit: Vanessa Stump



**Chef Daniel Humm**  
Credit: Marco Grob

What is the Power of Love® gala? For its loyal following, it's a red-letter day on the calendar around which vacations and other personal commitments are scheduled.

On Saturday, March 16, we'll be honoring international superstar Lionel Richie, who has more than 100 million albums sold worldwide; an Oscar, a Golden Globe and four Grammy awards; the distinction of MusicCares Person of the Year in 2016 and was a Kennedy Center honoree in 2017.

We will present the Keep Memory Alive Caregiver Hero Award to Lonnie Ali, devoted wife and care partner to the late, great Muhammad Ali, who celebrated his 70th birthday at our 2012 gala. The challenges of brain disease impact patients and their families in unimaginable ways. Lonnie Ali's grace and selflessness make her a true caregiver hero.

## The Finest Food and Festivities

If you haven't yet attended the Power of Love gala, imagine an evening of first-rate headliner entertainment, food prepared by celebrity chefs and wine chosen by master sommeliers. Now imagine that same evening in the entertainment capital of the world.

After 22 years, Keep Memory Alive's Power of Love gala has become one of Las Vegas' signature celebrity events and now attracts a national audience. Chefs represent a culinary who's who: This year, Daniel Humm of the celebrated Eleven Madison Park will join Wolfgang Puck, who marks more than 20 years in our kitchen.

Then, entertainment kicks into high gear. Guests have been entertained by legends, A-listers and Grammy Award winners: Tony Bennett, Andrea Bocelli,



Jon Bon Jovi, Bono, Michael Bubl , James Corden, Celine Dion, Gloria Estefan, Jennifer Hudson, Carole King, Lenny Kravitz, Queen Latifah, Barry Manilow, Ricky Martin, Steven Tyler, Stevie Wonder and many other luminaries. Join us in 2019 and get ready to be surprised!

### The Purpose Behind the Party

But this gala is much more than a party. It's an annual celebration of life that exists to raise money for Cleveland Clinic Lou Ruvo Center for Brain Health's programs and services. It reaffirms the critical role of generous donors, all of whom share the mission of eradicating devastating brain afflictions forever.

The statistics around Alzheimer's, Huntington's and Parkinson's diseases, as well as multiple sclerosis and the other degenerative brain diseases addressed at the Lou Ruvo Center for Brain Health, attest that we will all be touched, or we will know someone who is. Alzheimer's disease alone is an epidemic, with one in three adults developing the disease by age 85. That means one-third of us will have it; the rest of us will be caregivers.

Won't you join us at the gala in raising funds to find better treatments — and perhaps, one day, a cure — for these diseases that pose an unacceptable future?



### POWER OF LOVE GALA: SATURDAY, MARCH 16, 2019

Interested in attending the Power of Love gala this spring? Please contact 702.263.9797 or [events@keepmemoryalive.org](mailto:events@keepmemoryalive.org). More information about this year's event, as well as other ways to support Keep Memory Alive throughout the year, is online at [keepmemoryalive.org](http://keepmemoryalive.org).



Lionel Richie



Lonnie with Muhammad Ali

# Gala Performers Give of Themselves Offstage Too

Each spring, a collection of the world's A-list celebrities perform at Keep Memory Alive's annual Power of Love® gala. They lend their image and enthusiasm to drive ticket sales and raise funds at the gala, which is our single largest annual source of funds (see page 5).

They tour Cleveland Clinic Lou Ruvo Center for Brain Health and often — as happened with Babyface, the Estefans and the Bocellis — are captivated by the center's mission to improve education and support services for individuals and families living with diseases whose ravages even a VIP can't escape.

## SINGER KENNETH EDMONDS MAKES SOCIAL SERVICES POSSIBLE FOR FAMILIES



Larry Ruvo, Nicole Pantenburg  
and Kenneth Edmonds

"Everyone loved my mother" says Kenneth "Babyface" Edmonds, the Grammy award-winning R&B singer, songwriter and record producer. "She was an energetic, spicy lady with a great sense of humor."



Barbara and  
Kenneth Edmonds

Widowed at age 40, Barbara Edmonds supported her six sons by working as a manager at the pharmaceutical company Eli Lilly. "She was a strong woman who was dedicated to her kids, every one of us," says Mr. Edmonds.

Over the years, Mrs. Edmonds began having problems with her memory. In 2010 at Cleveland Clinic Lou Ruvo Center for Brain Health, she was diagnosed with Alzheimer's disease.

"My mother still had her sense of humor, but the full essence of her was no longer there," says Mr. Edmonds. "Alzheimer's is a lonely disease — it takes away the person's awareness that they are loved and the comfort that love provides when you're sick."

Caregivers of people with Alzheimer's disease are "the true heroes who need support so they can take care of themselves, which ultimately helps them care for the patient. It's a blessing to use my talent to help people with Alzheimer's and their families," says Mr. Edmonds, who supports the Barbara "Spicy Lady" Edmonds Lunch & Learn series.

## THE ROLANDO BRUNELLI CAREGIVER PROGRAM

Inspired by his experience performing at the Power of Love gala in April 2015, Andrea Bocelli and his wife, Veronica, lent their family name to yet another Keep Memory Alive fundraising effort just months later, establishing the Rolando Brunelli Caregiver Program at Cleveland Clinic Lou Ruvo Center for Brain Health — a program that continues to enrich the lives of hundreds of caregivers.



Veronica and Andrea Bocelli

Named in honor of Veronica Bocelli's grandfather who succumbed to

Alzheimer's disease, the program acknowledges that family caregivers — isolated at home while providing essential care to individuals with declining cognition — are as much victims of the disease as are the patients themselves.

Through music, art and a range of creative activities from Conversations to Remember to the Learning Arts, the Rolando Brunelli Caregiver Program enhances the relationship between caregiver and patient, allowing caregivers to experience their care partners in a different way. Caregivers receive the guidance to engage in creative activities designed to transform their lives and those of the loved ones for whom they care.



## A GIFT FROM GLORIA AND EMILIO ESTEFAN OPENS SUPPORTIVE SERVICES FOR THOSE LIVING WITH MS

There is much more to multiple sclerosis (MS) than the physical symptoms: The disease also has a major impact on lifestyle and emotional well-being.

To enable patients to get the services they need to live a fuller life, the Cleveland Clinic Mellen Program for Multiple Sclerosis at Lou Ruvo Center for Brain Health, Las Vegas facilitates the Major José M. Fajardo Patient Services Program. The Fajardo Program is funded by a generous gift from Grammy Award-winning singer Gloria Estefan and her husband, songwriter and producer Emilio Estefan, in honor of Gloria Estefan's father who suffered from MS, which he developed during his service in Vietnam.

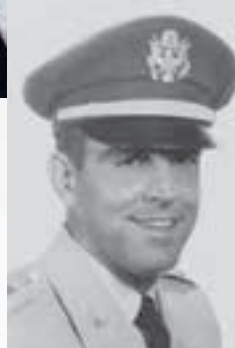
As a caregiver for her father at the end of his life, Gloria Estefan has firsthand experience of the compelling need for a comprehensive approach to MS treatment to help patients and their families. "What happens with a brain disease is very difficult both for the patient and for the family taking care of them. During my father's illness, I put on a brave face, but it was very, very tough on me and my family. Had I had the type of help and support that this patient service program provides, it would've been a lot easier," says Mrs. Estefan.

The Fajardo Patient Services Program at the Mellen Program for MS at Lou Ruvo Center for Brain Health provides direct access to unique opportunities, such as yoga therapy for MS (see page 24), and a dedicated patient services coordinator, Sandy Chapman, who helps patients with a variety of non-medical issues, such as arranging transportation to medical appointments, securing in-home care, completing applications for financial assistance and providing referrals to clinical trials.

To schedule an appointment with Sandy Chapman, please call us at 702.776.7000.



Emilio and Gloria Estefan with Jeffrey Cummings, MD, ScD



Major José M. Fajardo

## BORN FROM THEIR FAMILY EXPERIENCE: NOW MAKING A LASTING IMPACT ON OURS

Thanks to contributions from donors like these, the Lou Ruvo Center for Brain Health provides no-cost educational services including the Lynne Ruffin-Smith Library and the weekly Barbara "Spicy Lady" Edmonds Lunch & Learn series.



"Gaining knowledge and coping skills is so empowering for families," says Dylan Wint, MD, NV Energy Chair for Brain Health Education and Chief, Medical Operations.

A calendar of no-cost education and support programs is available online at [keepmemoryalive.org/socialservices](http://keepmemoryalive.org/socialservices). To join the monthly mailing list, please e-mail [LouRuvoSocialServ@ccf.org](mailto:LouRuvoSocialServ@ccf.org) or call 702.778.6702.

# Recognized for Excellence

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

**We celebrate their accomplishments.**

**2018 Alumnus of the Year** (*University of Nevada, Las Vegas, October 2018*)

**Charlie Bernick, MD, MPH**  
(School of Community Health)

**Maileen Ulep-Reed, MSN, APRN, FNP-BC**  
(School of Nursing)



**Health Care Heroes Award, Innovator Category**  
(*Nevada Business Magazine, September 2018*)

**Aaron Ritter, MD**

**Top Doctors**  
(*KNPR's Desert Companion, August 2018*)

**Jeffrey Cummings, MD, ScD**

## Cleveland Clinic named a Research Center of Excellence

In September, Cleveland Clinic Lou Ruvo Center for Brain Health was named a Research Center of Excellence by the Lewy Body Dementia Association. Joining a select group of 23 centers, this designation will bring us new clinical trials in the area of Lewy Body Dementia (LBD), a severe brain disorder that affects cognition, movement and behavior.

The Lou Ruvo Center for Brain Health has been treating LBD since 2010, and has continued to build our program as new clinicians have joined us, including most recently Zoltan Mari, MD, who heads our Movement Disorders Program. To make an appointment with one of our specialized neurologists, please call 702.483.6000.



## PHILANTHROPIST BADGE

(GIRL SCOUTS OF SOUTHERN NEVADA, SEPTEMBER 2018)

When honoring Anna Robins at its annual Dessert Before Dinner gala, the Girls Scouts of Southern Nevada said of her:

*“A native Las Vegas and University of Nevada, Reno alumna, Anna Robins has become one of the most influential players in the philanthropic and event communities in Las Vegas. As one of Las Vegas’ premier event producers, Anna Robins plays a crucial role in Keep Memory Alive and Cleveland Clinic Lou Ruvo Center for Brain Health’s fight against neurocognitive diseases.*

*Since the charity’s inception in 1998, Robins has been instrumental in the growth of its fundraising efforts, including the annual Power of Love® gala, one of the most renowned single-night fundraising events in the country.”*



## 2018 HAS BEEN A YEAR OF NOTABLE DESIGNATIONS FOR THE LOU RUVO CENTER FOR BRAIN HEALTH, WHICH HAS:

- Been named a Research Center of Excellence by the Lewy Body Dementia Association (see side bar)
- Been the only program in Southern Nevada to receive the Partners in Care designation from the National Multiple Sclerosis Society (renewed in 2018 for 3 more years)
- Been named one of the first five CurePSP Centers of Care in the United States
- Been named one of the Cleveland Clinic locations of the Parkinson's Foundation Center of Excellence
- Continued to operate the only Huntington's Disease Comprehensive Clinic in Nevada
- And, as part of Cleveland Clinic, been named the No. 4 neurology program in the country for 2018-19 in *U.S. News and World Report's* annual rankings

As we head into 2019, the Lou Ruvo Center for Brain Health celebrates its 10th anniversary. We are so proud to have earned recognition for clinical excellence in our first 10 years, and look forward to continuing to provide world-class care for patients.

### Cleveland Clinic Lou Ruvo Center for Brain Health Named First and Only Parkinson's Foundation Center of Excellence in Nevada

On October 19, Cleveland Clinic Lou Ruvo Center for Brain Health was honored by the Parkinson's Foundation by being designated as a Parkinson's Foundation Center of Excellence, the first and only in the state of Nevada and one of only 45 worldwide.

This sought-after designation identifies hospitals and academic medical centers with specialized teams — neurologists, movement disorders specialists, physical and occupational therapists, and mental health professionals — who are at the leading edge of the latest medications, therapies and innovations in Parkinson's disease.

Zoltan Mari, MD, Director, Parkinson's and Movement Disorders Program and Ruvo Family Chair, graciously accepted a commemorative plaque: "We are humbled by this recognition and will use it to continue making advancements in both clinical care and research so that our vision for a cure can one day become a reality."



**L – R: Larry Ruvo, Zoltan Mari, MD, Camille Ruvo, Stephen Bittel (Chairman and Founder of Terranova, a real estate firm based in Miami, and supporter of the Parkinson's Foundation Center of Excellence network expansion) and Sean Kramer (Vice President and Chief Development Officer of the Parkinson's Foundation)**



# Cleveland Clinic

Nevada

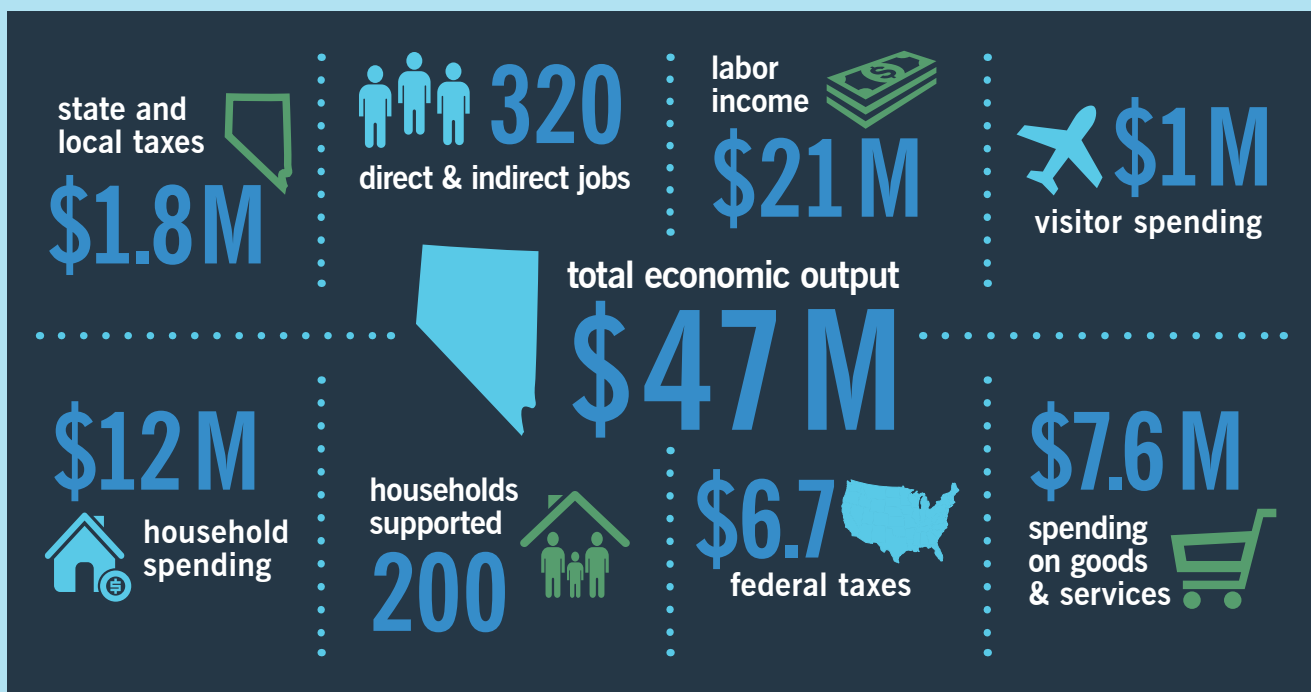
## HOW CLEVELAND CLINIC NEVADA IS IMPACTING THE STATE'S ECONOMY



Since 2009, Cleveland Clinic has been providing quality healthcare services in the Clark County region, through the Lou Ruvo Center for Brain Health. We generate economic activity as an employer, a purchaser of local goods and services and a generator of tax revenues at all levels.

### We provide a robust community benefit, including:

- Charity care
- Educating tomorrow's healthcare professionals
- Research to discover advanced treatments



Learn more at [clevelandclinic.org/Nevada](http://clevelandclinic.org/Nevada)

Download a copy of the full report at [ClevelandClinic.org/EconomicImpact](http://ClevelandClinic.org/EconomicImpact)

# Advances in Alzheimer's Treatment:

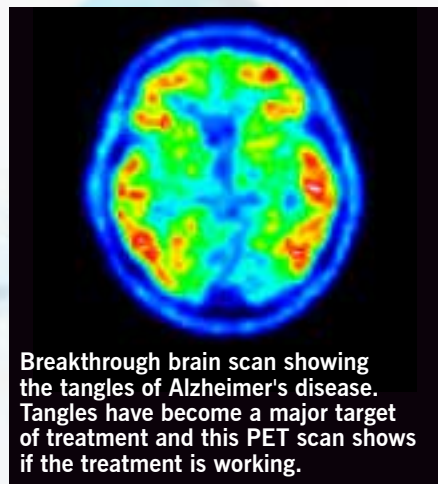
**A Conversation with Jeffrey Cummings, MD, ScD**  
**Director Emeritus, Cleveland Clinic Lou Ruvo Center for Brain Health**

*Q: You've been a leader in Alzheimer's disease and dementia for about three decades now. How has the field changed?*

A: When I started, neurodegenerative syndromes such as Alzheimer's disease were regarded as a death sentence: Once you were diagnosed, you were doomed to a steady decline until you died from it. When the first drug — tacrine — was approved in 1993, the thinking began to change toward a recognition that there are ways Alzheimer's disease can be controlled, making it a condition one may be able to live with.

Thirty years ago, diagnosing Alzheimer's disease was based almost solely on symptoms; now advances in imaging — MRI, CT and PET scanning — allow us to make the diagnosis with more certainty:

- We can see amyloid protein on PET scans, which is very specific to Alzheimer's disease.
- PET imaging of tau protein — at this point used only for research — promises to be an important tool for disease staging and therapy monitoring.



**Breakthrough brain scan showing the tangles of Alzheimer's disease. Tangles have become a major target of treatment and this PET scan shows if the treatment is working.**

*Q: What's coming up next in the field?*

A: No new Alzheimer's-specific drugs have been approved in 15 years! I think we're very close to approving two exciting new drugs with a mechanism of action very different from existing therapies. Both aim to reduce amyloid plaques and slow neurodegeneration.

*Q: What does the future look like?*

A: There are few diseases with a greater potential impact on public health. If nothing more is done to combat it, we are facing 130 million cases worldwide by the year 2050, compared with about 50 million now. The costs of caring for these patients are staggering. Even if only one-third of patients could be helped with new therapies, the savings would be enormous.

People often ask me if we're on the verge of a real breakthrough in Alzheimer's disease. I have stopped predicting, and I honestly can't say if we're one step away or 100 steps away. But I do know that in order to progress, we must take the next step.



**Jeffrey Cummings, MD, ScD, Director Emeritus Cleveland Clinic Lou Ruvo Center for Brain Health**

*"A bit of advice drawn from my own experience is to listen carefully to patients and their caregivers, who are the greatest instructors in this field. Only they can tell you what it feels like to have the disease and what they need to make their lives better."*

## YOU CAN HELP



Interested in learning more about our trials? Want to help? We need individuals with memory loss as well as those who are cognitively normal. A complete list of trials at the Lou Ruvo Center for Brain Health is at [clevelandclinic.org/brainhealthtrials](http://clevelandclinic.org/brainhealthtrials).

Contact us at 855.LOU.RUVO or [healthybrains@ccf.org](mailto:healthybrains@ccf.org) to see if you or someone you know is a match for any of our trials.

Increasing the number of clinical trials for promising drugs and getting patients enrolled in them are critical challenges we must address immediately. Thank you for your help.

# Our Center at 10: A Fertile Research Environment

Aaron Ritter, MD

During the past decade, Cleveland Clinic Lou Ruvo Center for Brain Health has come of age in step with an accelerated drive among scientists worldwide to penetrate the secrets of the brain. Since it opened its doors in February 2009, the center has taken its place among front-line research institutions racing to find a cure for the spectrum of devastating neurological diseases that plague humankind.

Reflecting on the past, Aaron Ritter, MD, Director of Clinical Trials, sees evidence of progress. Looking toward the future, he sees signs of hope. He also sees the Lou Ruvo Center for Brain Health building on its achievements as it embarks on its second decade. Here's a snapshot of where we've been and where we aspire to go.

## Everyone Can Contribute

We maintain a robust clinical trials program, which has supplied more than



2,500 participants in studies across three disorders: Alzheimer's disease (AD), Parkinson's disease (PD) and related parkinsonian disorders, and multiple sclerosis (MS).

"Our site has quickly become one of the largest contributors to clinical trials and research studies," says Dr. Ritter. "Many patients and their families have made significant contributions to science by participating in research. Our vision is

to give everyone who walks through our doors the opportunity to help find a cure for neurodegenerative disease."

A glimpse at [clevelandclinic.org/brainhealthtrials](http://clevelandclinic.org/brainhealthtrials) confirms the breadth of the research commitment.


The list of ongoing studies includes four major types:

### 1. Prevention Trials

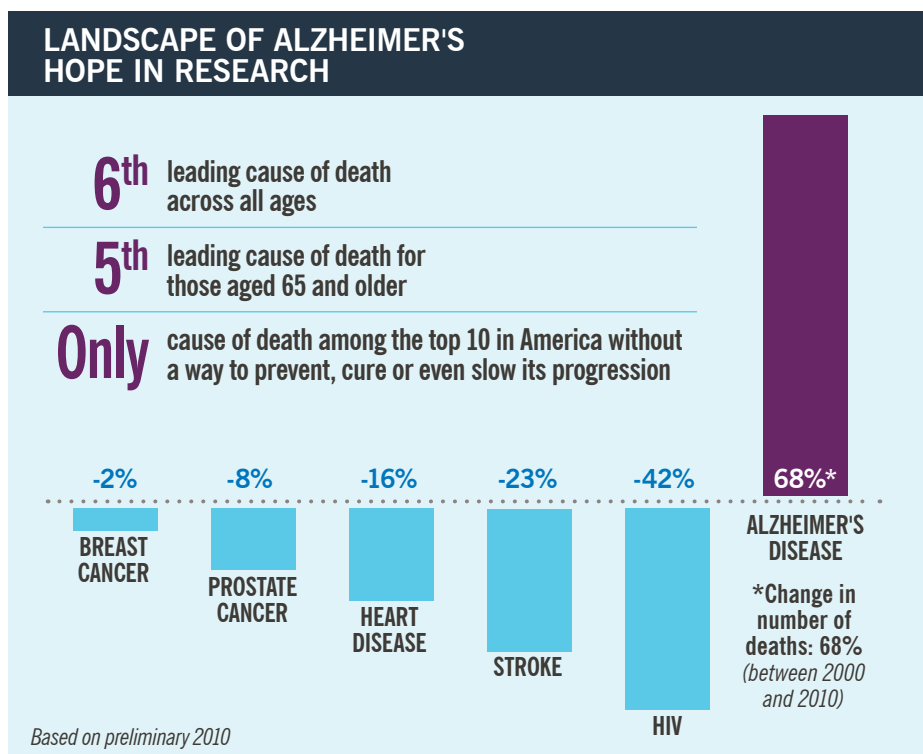
These trials focus on preventing the

## BRAIN GAIN

Whether you want to make brain-preserving lifestyle choices, test your memory or learn how to volunteer for a clinical trial, [HealthyBrains.org](http://HealthyBrains.org) is the resource for you.



The Lou Ruvo Center for Brain Health developed the website and app for people eager to control the factors they can to live a dementia-free life as they age. Are you among them? Explore the wealth of information, including research opportunities, at [HealthyBrains.org](http://HealthyBrains.org).



## ALZHEIMER'S DISEASE UNMET MEDICAL NEED



**LARGEST**  
area of unmet  
medical need  
in neurology

**+5  
million**

people living with Alzheimer's in the US

- 200,000 are under age 65 who have younger onset
- 1 in 9 people over age 65 and 1 in 3 over age 85 have AD

## EXISTING TREATMENTS

have only modest efficacy at  
improving symptoms and don't  
address the underlying disease

*Current standard of care includes  
cholinesterase and NMDA inhibitors to treat  
memory loss as well as antidepressants and  
antipsychotics for mood symptoms*



**+15  
million**

people providing care /  
support for someone  
with Alzheimer's or  
related dementia

*Alzheimer's Association, 2014 Alzheimer's Disease Facts and Figures*

onset of brain disease. Typically, they enroll people who are asymptomatic, but who may eventually develop a neurodegenerative disease because of risk factors such as genetics, a positive amyloid brain scan or family history. Dr. Ritter notes that these studies can be lengthy because of the time required for brain disease to develop.

### 2. Treatment Trials

These studies test potential new treatments for individuals with brain disease. The Lou Ruvo Center for Brain Health was among multiple medical centers that tested Ocrevus® (ocrelizumab), a medication delivered by infusion that was approved in 2017 to treat adults with relapsing or primary progressive forms of MS.

### 3. Observational Trials

These studies add to our understanding of how the brain changes over time. They shed light on areas such as disease progression, symptoms and biological markers of disease. They do not test new medications.

Dr. Ritter points to influential observational studies such as ADNI, which examines how brain scans and other tests change in individuals with AD, and the Professional Fighters Brain Health Study, which follows active and retired boxers, mixed martial arts combatants and now,

bull riders, to gauge the effects of repeated head trauma.

Also significant is Southern Nevada's first Center of Biomedical Research Excellence (COBRE), which unites researchers from the Lou Ruvo Center for Brain Health and the University of Nevada, Las Vegas (UNLV) in probing brain changes in both AD and PD.

### 4. Lifestyle Trials

These studies assess the impact of lifestyle choices on brain health. The EXERT study, for example, "tests exercise like it's a drug," says Dr. Ritter, with participants engaging in various forms of exercise to measure their effect on memory loss in mild cognitive impairment (MCI).

### A Focus on Early Detection

With all these trials, the Lou Ruvo Center for Brain Health is helping to frame the scientific discussion as we move closer to finding better treatments. Dr. Ritter is optimistic about the research environment and the center's place in it.

"Four years ago, it could be depressing to attend an AD conference," he says. "Now, we're actually seeing medications that can change brain amyloid scans from positive to negative. But there's still a lot of work to do, and it's only through patient participation in research that we'll continue to advance."

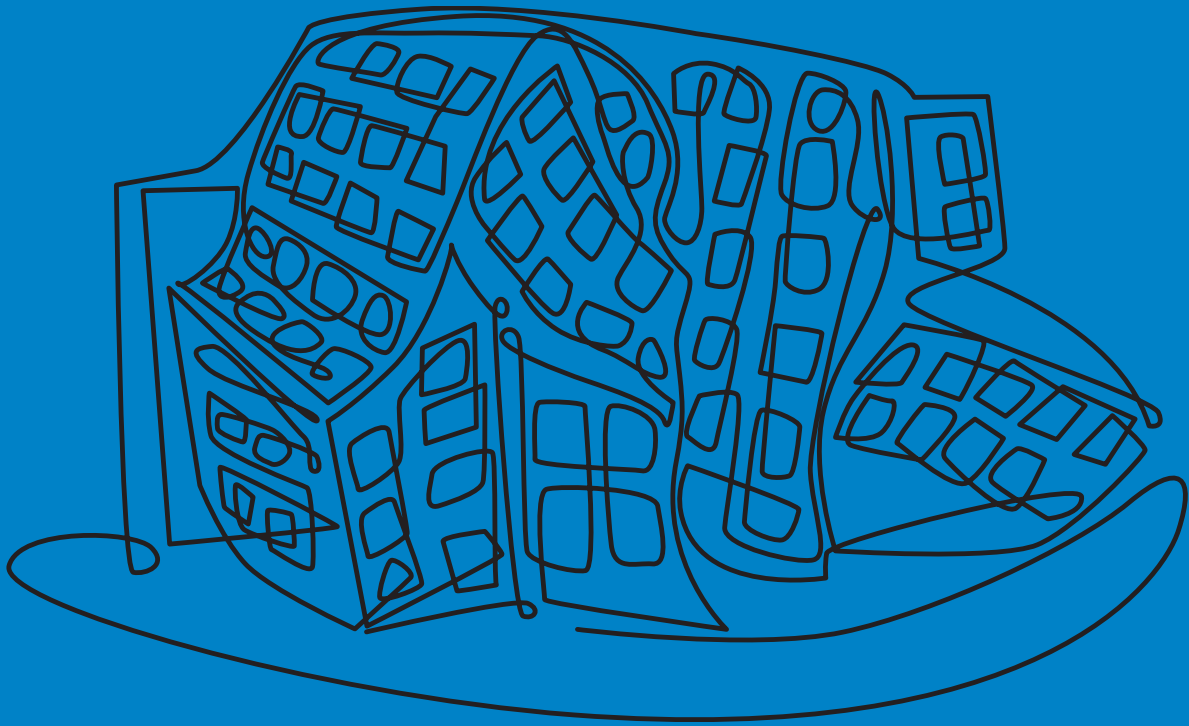
## THE DIY APPROACH

One sign of the Lou Ruvo Center for Brain Health's research prowess is our investigator-sponsored studies, in which a researcher with an idea designs a study, secures funding and recruits volunteers.

"It's almost a one-person show," says Aaron Ritter, MD, "and it allows us to pursue scientific theories and medicines that would not otherwise be tested. Dr. Cummings took this path in his studies of bexarotene and rasagiline."

Jeffrey Cummings, MD, ScD, Director Emeritus, Lou Ruvo Center for Brain Health, studied the anti-cancer drug bexarotene and reported that, while it reduced the brain amyloid burden in Alzheimer's disease (AD) subjects, the duration the drug was tested (two months) was probably too short to see clinical benefit. Dr. Cummings has also tested rasagiline, a drug approved to treat PD, to see if it improves brain function or reduces tau levels in people with AD. Those results have not yet been reported.





**What happens in Vegas  
will benefit the rest  
of the world.**



**Lou Ruvo Center for Brain Health**

In partnership with Keep Memory Alive.  
Learn more. [clevelandclinic.org/brainhealth](https://clevelandclinic.org/brainhealth)



# Salivary Test Shows Promise in Finding Alzheimer's Disease

Imagine that simply by spitting into a test tube, you could learn whether you were at risk for Alzheimer's disease (AD), even if you showed no clinical signs of the disorder. A new study offers hope that saliva may function as an inexpensive, noninvasive biomarker for detection of AD in the earliest stages, when therapy is most effective.

A team of researchers including Marwan N. Sabbagh, MD, Director, Cleveland Clinic Lou Ruvo Center for Brain Health, collected and tested saliva from 15 patients with mild to moderate AD and seven normal controls. Results were published in the international journal *BMC Neurology* in September 2018.

## A Simple Detection Method

The team found that levels of a peptide known as beta amyloid ( $A\beta$ )<sub>42</sub> were 2.45 times higher in the AD patients, a significant increase. Deposits of  $A\beta$ <sub>42</sub> have been found in the brains of patients a decade or more before the onset of Alzheimer's disease.

"Typically, we rely on biomarkers such as cerebrospinal fluid and tools such as imaging to detect the presence of  $A\beta$ <sub>42</sub>," Dr. Sabbagh explains. "These tests are expensive and access is limited. Saliva, by contrast, is easily acquired. A test for salivary  $A\beta$ <sub>42</sub> could help confirm a diagnosis of AD or serve to screen out people unlikely to develop the disease."

## You Can Make a Difference

To date, researchers have not been able to answer a key question: Where does salivary  $A\beta$ <sub>42</sub> come from? Is it produced by the salivary gland or another source in the body?



Participant prepares to take genetic test

"That is just one area ripe for follow-up," says Dr. Sabbagh. "We also need to investigate whether a salivary test could detect  $A\beta$ <sub>42</sub> in patients with mild cognitive impairment, Parkinson's disease and other brain disorders, and whether  $A\beta$ <sub>42</sub> levels change as dementia becomes more severe." He has submitted this project to the Bill and Melinda Gates Foundation as an invited grant, and hopes one day to have a simple screening test to detect amyloid.

You can help answer researchers' questions about brain disease by participating in research studies. Learn more at 855.LOU.RUVO or [healthybrains@ccf.org](mailto:healthybrains@ccf.org). For a complete list of clinical trials at the Lou Ruvo Center for Brain Health, go to [clevelandclinic.org/brainhealthtrials](http://clevelandclinic.org/brainhealthtrials).

## ARE YOU PREDISPOSED TO ALZHEIMER'S DISEASE?



A painless cheek swab can reveal your genetic profile. If it shows you're at risk for Alzheimer's disease, you may be invited to participate in the Generation Study, a multicenter clinical trial that includes the Lou Ruvo Center for Brain Health.

Volunteers will receive one of two investigational medications or a placebo, and will be tested regularly for disease symptoms. Learn how you can join: 855.LOU.RUVO or [healthybrains@ccf.org](mailto:healthybrains@ccf.org).

# Potent New Weapons May Target Causes of Brain Disease

When you hear the term “disease-modifying therapies,” you may well ask, “Don’t all therapies attempt to modify disease?” The short answer is that many do, but not all. Some treatments, for example, aim only to improve symptoms (symptomatic therapies). This is how Aaron Ritter, MD, explains the difference:

“There are four approved Alzheimer’s disease (AD) medications. All four have symptomatic benefits in that they help the brain work more efficiently, but there is little data to suggest they stop the processes causing the disease. Taking a symptomatic medication is like pouring oil into your car’s engine; it helps the car run better, but it doesn’t necessarily fix the underlying problem.”

Disease-modifying therapies, on the other hand, offer hope of preventing or halting the progression of disease.

“With recent advances in our understanding of how AD causes the brain to malfunction, we may now be able to target some of these disease processes,” says Dr. Ritter, Director of Clinical Trials for Cleveland Clinic Lou Ruvo Center for Brain Health. “This is a very exciting time because a number of promising disease-modifying therapies are being tested at our center.”

He cautions, however, that challenges persist: “Changes tend to occur slowly in neurodegenerative diseases. Showing that a medication has an impact on disease course may take years to demonstrate.”

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“Ancient writings tell us that brain diseases have plagued people for thousands of years,” says Dr. Ritter. “Conquering them would be a global achievement with enormous political, social and economic consequences for all humanity.”

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## A BRIEF GUIDE TO CLINICAL TRIALS

Thanks to the selflessness of clinical trial volunteers, researchers gain valuable insights on how the brain works and why sometimes it doesn’t. Clinical trials have varying aims (see [page 13](#)) but, with the exception of observational studies, which contribute to our understanding of brain changes, but do not test new medications, most trials conducted at the Lou Ruvo Center for Brain Health fall in the disease-modifying therapy category.

These studies are also termed “interventional” because new treatments (or placebos) are administered to participants. Here’s a brief rundown of only a few of the ongoing interventional trials in the center’s three major areas of focus:

### Cognitive

**TANGO:** Asks whether an antibody against the tau protein, given as an IV infusion, can slow the decline of cognitive and functional impairment in people with mild cognitive impairment (MCI) or mild Alzheimer’s.

**EMERGE:** Tests whether an antibody directed against amyloid protein and given as an IV infusion can slow cognitive and functional impairment in early Alzheimer’s disease.

**GRADUATE II:** Tests whether an antibody directed against amyloid and given as a subcutaneous injection can slow cognitive and functional impairment in early Alzheimer’s disease.

### Movement Disorders

**Nilo-PD:** Asks whether the anti-cancer drug nilotinib can be repurposed to slow the progression of Parkinson’s disease (see [page 19](#)).

### Multiple Sclerosis

**ARISE for MS:** Investigates whether starting treatment promptly with the drug Tecfidera®, used to treat relapsing forms of multiple sclerosis (MS), can delay or prevent onset of the disease in people whose brain scans indicate that MS may be developing.

You can view a full list of ongoing trials, many of which are currently recruiting volunteers, at [clevelandclinic.org/brainhealthtrials](http://clevelandclinic.org/brainhealthtrials).





### The Case for Early Intervention

The quest to find therapies that will attack the causes of brain disorders argues strongly for intervention before disease becomes severe. The lessons of the past decade are clear: the earlier we can test disease-modifying therapies, the better, says Dr. Ritter: “This has led us to encourage patients and families to pursue early testing, diagnosis and treatment.”

If early intervention could delay the onset of Alzheimer’s disease by five years, he adds, we could decrease its prevalence by 50 percent — and save countless patients and families the heartbreak of a disorder for which we currently have no cure.

### A Global Cause Needs Grassroots Support

Of course, the benefits of a breakthrough in halting the wreckage from the morbidity and mortality of neurodegenerative disease extend far beyond the family circle.

You can enlist in the fight. We have made significant strides in the first 10 years of the Lou Ruvo Center for Brain Health’s existence, but we need you more than ever to accelerate the tempo in the next decade. Together, we can make advances we only dream of today.

To find out if you, a loved one or a friend meets the qualifications for one of our clinical trials, call 855.LOU.RUVO or email [healthybrains@ccf.org](mailto:healthybrains@ccf.org).

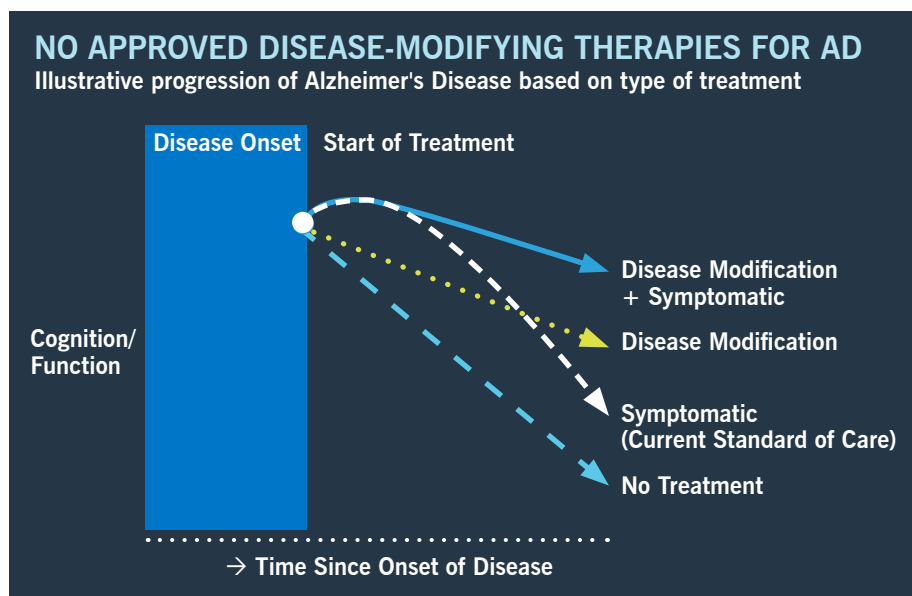
## SHOULD OLDER MS PATIENTS STOP DISEASE-MODIFYING THERAPY?

Multiple sclerosis (MS) patients older than 60 who stopped disease-modifying therapy suffered no significant difference in quality of life or disease progression, as measured by magnetic resonance imaging (MRI), compared with a control group that continued the therapy in two research studies led by Le Hua, MD, Director of the Mellen Program for MS at the Lou Ruvo Center for Brain Health, Las Vegas.

Patients at three Cleveland Clinic sites, including Las Vegas, were involved in the studies, which Dr. Hua reported on last October at the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS).

Only one of the 178 patients who stopped their medication suffered a relapse, and only 10.7 percent restarted therapy, according to Dr. Hua. The findings suggest that age may be a critical factor in deciding whether and when to halt treatment.

“When you’re young with early MS, your disease is overwhelmingly inflammatory,” Dr. Hua told *Medscape Medical News*. “When you get older, the overt inflammation tends to die down,” raising the question of whether immune-modulating therapy confers any benefit at that point.



Based on: Kennedy GJ. *Primary Psychiatry*, Vol. 14, No. 11, 2007.

# NILO-PD: Can an Old Drug Teach Us New Tricks About Disease Modification?

Many approved medications treat Parkinson's disease (PD) symptoms, but none can modify the disease and slow its progression. This situation could be changing: The drug nilotinib, which is used to treat leukemia and other white blood cell cancers, has shown promise in a Phase I trial.

Cleveland Clinic Lou Ruvo Center for Brain Health is one of 25 sites nationwide participating in NILO-PD, a Phase II disease-modifying trial of nilotinib. Disease-modifying trials are particularly important because they evaluate drugs that have the potential to change the underlying disease (see page 17).

"NILO-PD is one of the highest-profile Parkinson's disease trials," says Zoltan Mari, MD, Director, Parkinson's Disease and Movement Disorders Program and Ruvo Family Chair. "We have medications like L-dopa that can treat Parkinson's symptoms, but nothing that can prevent cognitive and motor decline in patients. If we found a drug that could, it would "be revolutionary."

## Targeting a Protein Linked to Parkinson's Disease

Why would a cancer drug work for PD? Many drugs that are developed for one disease may affect another, a phenomenon known as "repurposing."

Nilotinib is able to penetrate the blood-brain barrier (a critical factor in treating neurodegenerative diseases) and inhibit the activity of a protein, c-Abl, that is linked to pathways associated with PD. The drug also stimulates the cellular clearance system, or "garbage disposal," which clears out the toxic proteins that accumulate in brain cells in PD and impair their functioning.

For Kevin Kefgen, 44, a Las Vegas video editor and a patient of Dr. Mari's who was diagnosed with PD seven years ago, joining the NILO-PD study was an easy decision. "If you have the opportunity to participate in a clinical trial, you should. If I can help someone at my stage or a more advanced stage of the disease, I'll absolutely do it," he says.



"I am convinced that c-Abl is an excellent target that could minimize the disease impact," says Dr. Mari.

## If You Have PD, Join NILO-PD

NILO-PD is currently recruiting participants for the eight- to nine-month trial, which will include 13 in-person visits. Participants will receive a free comprehensive evaluation.

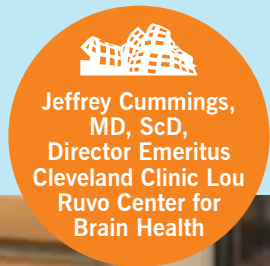
"If nilotinib ends up being effective, trial participants will be the first to benefit from it. They also will help millions of other people with the disease," says Dr. Mari.

If you are interested in learning more about trials for Parkinson's disease, call 855.LOU.RUVO or email [healthybrains@ccf.org](mailto:healthybrains@ccf.org).



Zoltan Mari, MD, assesses Kevin's gait

# CTAD Conference Highlights Progress in Alzheimer's Disease Treatment



At the 2018 Clinical Trials on Alzheimer's Disease (CTAD) annual conference, study results showed major progress toward understanding and treating the disorder. Jeffrey Cummings, MD, ScD, Director Emeritus, and Marwan N. Sabbagh, MD, Director, Cleveland Clinic Lou Ruvo Center for Brain Health, were front and center at the October event in Barcelona, Spain, leading sessions and participating in panel discussions, sharing knowledge developed by the center's staff with an international audience.

Alzheimer's disease (AD) research and drug development have focused on two proteins — amyloid-beta and tau — that accumulate in the brains of AD patients, causing plaques and tangles thought to impair brain function and, ultimately, to destroy brain cells.

## Targeting Amyloid

A conference highlight was the symposium on BAN2401, a drug that stimulates the immune system to clear amyloid from the brain. Among the presenters was Dr. Cummings, who was an adviser to the BAN2401 clinical trial, which studied 856 individuals with early-stage AD. Patients who received treatment with BAN2401 had slower cognitive decline and a marked reduction of amyloid accumulated in the brain.

"The 18-month results of the BAN2401 trial are impressive and provide important support for the amyloid hypothesis, which is the theory that amyloid is a cause of AD," says Dr. Cummings.

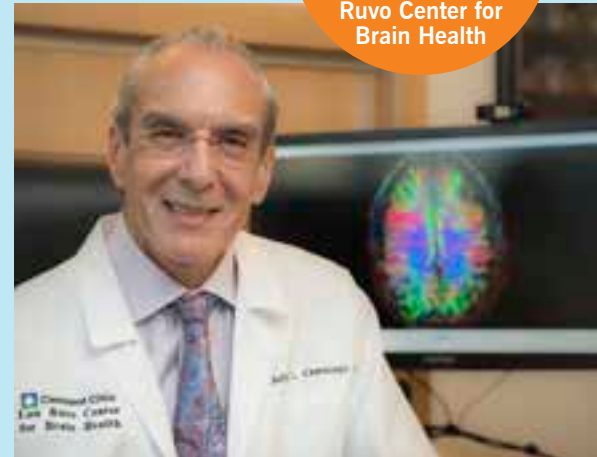
Promising results were reported at the AMBAR trial session, moderated by Dr. Cummings. The AMBAR trial evaluated another approach to targeting amyloid: extracting plasma that contains the protein. Trial participants with moderately severe disease who received the treatment

showed a significant reduction in disease progression.

Even trials with negative results help advance understanding of what works and what doesn't. Dr. Cummings also moderated a symposium on the APECS trial that tested the drug verubecestat. While verubecestat did lower amyloid in spinal fluid, it did not slow disease progression in patients with mild to moderate AD. This finding suggests that targeting amyloid early in the disease process may be most effective.

## Switching Drugs: a Better Strategy?

Combination therapy and anti-tau trials were the focus of a session featuring Dr. Sabbagh. "At CTAD, we discussed where Alzheimer's patients are on the disease continuum and whether we should use the same drug for the duration of the disease or consider making changes along the way," he says.



That's the concept of combination therapy: beginning treatment with one drug, then switching to a maintenance drug. Also gaining more attention is anti-tau therapy, which targets the tau protein that, unlike amyloid, continues to build up throughout the course of the disease, causing further degeneration in the affected individual.

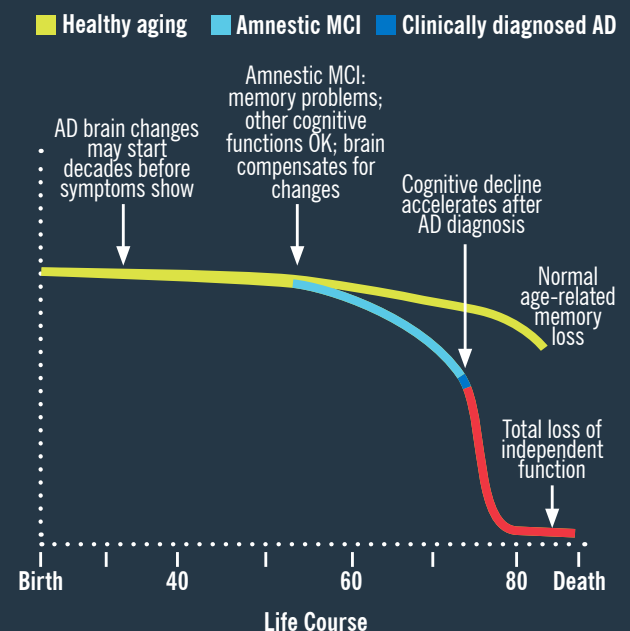
## ALZHEIMER'S DISEASE PROGRESSION

- Progressive, irreversible brain disorder which is not a part of normal aging<sup>1</sup>
- Insidious onset of early symptoms often mistaken for age-related memory change<sup>1</sup>
- Disease progression leads to behavioral and cognitive changes<sup>1</sup>
- Variable disease progression and rate of decline<sup>1</sup>
- Risk factors: aging, family history<sup>1</sup>, head injury<sup>2</sup>

MCI=mild cognitive impairment.

1. US Department of Health and Human Services. 2005-2006 Progress Report on Alzheimer's Disease, 2007.

2. Van Den Heuvel C, et al. Prog Brain Res. 2007;161:303-316.



# Study Compares Two MS Medications, Asks Which Is Better Tolerated

In recent years, unprecedented progress has been made in treating multiple sclerosis (MS), with many new disease-modifying therapies developed and more in the pipeline. But choosing the right one for a patient in a tailored approach can be difficult. With so many choices and most of the available data based on clinical trials as opposed to real-world practice, clinicians often don't have the evidence they need to guide their treatment recommendations and counsel patients.

"It's really exciting that the field of MS is advancing so rapidly in the neurotherapeutic arena," says Carrie M. Hersh, DO, MSc, Assistant Program Director, Multiple Sclerosis Health and Wellness Initiative, Mellen Program for MS at Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas.

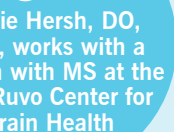
"But with so many new, emerging treatments, it's becoming more of a challenge to compare MS medicines in terms of safety, tolerability and how well they work."

## Real-World Response

To learn more about how MS patients respond to medications in practice, the Cleveland Clinic Mellen Program for MS and the Rocky Mountain Multiple Sclerosis Center at the University of Colorado conducted a large, two-center study comparing two oral disease-modifying therapies, dimethyl fumarate and fingolimod. These medications are commonly used for relapsing-remitting MS, to reduce relapses and new MRI lesions and delay disability progression.

After following 1,272 patients for two years, the study found that both medications were comparatively effective



 Carrie Hersh, DO, MSc, works with a person with MS at the Lou Ruvo Center for Brain Health

in treating the disease in a real-world population, with a low number of patients experiencing a relapse and no significant differences in the number of new MS lesions detected on brain MRIs.

Regarding medication discontinuation, more patients stopped taking dimethyl fumarate than fingolimod, and did so earlier in their treatment. However, over time, the discontinuation rates appeared to plateau.

"This study provides valuable insights about oral medications that will help patients make more informed decisions about medication options," says Dr. Hersh.

The study has been published in *Neurology: Clinical Practice* and its authors plan to present at the American

Academy of Neurology annual meeting in May 2019.

## Sharing Our Research Worldwide

At the European Committee for Research and Treatment in Multiple Sclerosis annual congress, Dr. Hersh discussed this study and Le Hua, MD, Director, Mellen Program for MS, Las Vegas, presented a study on the effects of tobacco use in MS patients treated with oral disease-modifying therapies, which received a "Top Score Poster" designation.

"It is critical for the Lou Ruvo Center for Brain Health's MS specialists to be represented at these important national and international meetings to present our novel research, share ideas and harness late-breaking information into the care of our patients," says Dr. Hersh.

# It Takes Two: We Need Public and Private Funding to Defeat Brain Disease

Healthcare spending in the United States is projected to grow 5 percent a year to represent 20 percent of the domestic economy by 2026. Yet, our country's health outcomes lag globally, with life expectancy (78.6 years) in the bottom quartile and adult obesity the highest at 30.2 percent of the population compared with an average of 16.5 percent worldwide.

This message came from Tannaz Rasouli, MPH, Senior Director of Public Policy and Strategic Outreach at the Association of American Medical Colleges (AAMC), who delivered the keynote address at the third annual Center of Biomedical Research Excellence (COBRE) and IDeA meeting, which took place in Las Vegas last November. While in town, Ms. Rasouli visited Cleveland Clinic Lou Ruvo Center for Brain Health to learn more about the center's efforts in research and treatment of neurodegenerative disease.

## Conference Attendees Ponder an Alternative Future

The COBRE/IDeA meeting brings together COBRE grant holders throughout Nevada to discuss ongoing research and updates in the field. In collaboration with the University of Nevada, Las Vegas, the Lou Ruvo Center for Brain Health was awarded Southern Nevada's first COBRE grant, which is funding research projects related to Parkinson's and Alzheimer's diseases.

Ms. Rasouli spoke of the AAMC's work, the role of the federal government in funding research and how science can advance the federal agenda.

She cited a 2018 Pew Research poll asking Americans whether they think government investment in scientific research usually pays off. Increasingly, Americans believe this, but about half believe private sector contributions are



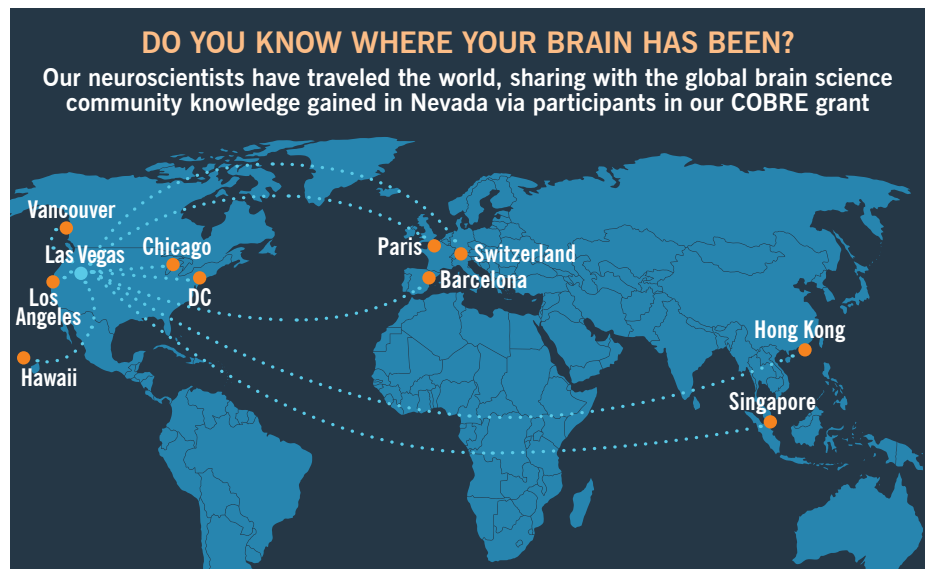
sufficient. In fact, she noted, public investment lays the foundation, which is then amplified by private funding; NIH funding supported all 210 drugs approved between 2010 and 2016.

Ms. Rasouli said that today, one in every five Medicare dollars is used on Alzheimer's disease care, and she encouraged attendees to envision a different future: "What if you could

avoid those costs? What if you could make the investment in research to change this trajectory?"

Indeed. What if ...

**If you're interested in contributing to research at the Lou Ruvo Center for Brain Health, please contact our development team at [DonateNevada@ccf.org](mailto:DonateNevada@ccf.org) or 702.263.9797.**



# Fourscore and Seven Years Ago ...

## We Worked Our Memories

Do you remember the last time you memorized something — even a phone number? With technology ever at our fingertips, we don't need to commit much of anything to memory now.

Yet, rote memory — the process of repeating information until it is lodged firmly in the brain — fell out of favor well before laptops, tablets and smartphones became part of our everyday lives. While earlier generations of students were routinely required to memorize poetry, great speeches, even the multiplication tables, educators had abandoned the practice as unproductive by the time most baby boomers were starting school.

### A Workout for The Brain

But not everyone believes memorization is a waste of time and effort. Small children reciting nursery rhymes are honing their developing memories and gaining an introduction to language patterns.

At the other end of the age spectrum, “Older adults who work their brains through memorization are stimulating neural plasticity, which alters the brain's neural pathways in response to new experiences,” says Marwan Sabbagh, MD, Director of Cleveland Clinic Lou Ruvo Center for Brain Health. “These functional brain changes occur whenever we acquire new knowledge or learn a new skill, and they appear to be important in warding off cognitive decline.”

### Memorization and Music

Music Therapist Becky Wellman, PhD, LPMT, MT-BC, says memorization and recall of music, too, can boost latent memories, and she enjoys feedback from family caregivers who marvel as they attribute changes in their loved one to the power of music.



  
Becky Wellman,  
PhD, LPMT, MT-BC,  
Music Therapist,  
finds music helps  
memorization

“It's common when hearing music to recall previous pleasurable encounters with the same tune, so it's not surprising that this still rings true in a population otherwise experiencing memory problems,” says Dr. Wellman. “What most people never expect, however, is that music can actually help build new memories in these same individuals.”

She explains that during music therapy, participants are actually able to learn new songs when “nothing else seems to stick.”

In fact, music is one of the oldest and most retained memories we have. People remember music when other memories are gone.

Research supports this. In a 2015 study by Juliette Palisson et al of 12 individuals with mild Alzheimer's and 15 healthy controls reported in the *Journal of Clinical and Experimental Neuropsychology*, results showed that sung texts were better remembered than spoken texts, both immediately and after a retention delay, for both groups.

So go ahead: Memorize something. Or better yet, sing a song. There's a world of wisdom out there that just might sharpen your brain and enrich your life.

**Interested in other tips for better brain health? Visit [HealthyBrains.org](http://HealthyBrains.org) and sign up for the monthly e-newsletter (see page 13).**



# Yoga Helps Those With MS Gain Strength and Shed Stress

Among the tools available to combat the mental and physical effects of multiple sclerosis (MS), yoga is emerging as one of the best. Growing knowledge about its benefits has inspired Cleveland Clinic Lou Ruvo Center for Brain Health to offer free weekly classes to individuals with MS for the past year.

“We have an incredible opportunity to extend our patients’ medical care to wellness classes,” says Ruth Almén, LCSW, Clinical Manager, Social Work Services. “Through the generosity of the Fajardo family’s foundation and with the recommendation and support of our doctors, this has been fairly easy to do.”

A wide variety of patients in all different stages of MS — even some who rely on walkers and scooters — attend the classes, which are held at Yoga for Life Las Vegas, whose specially trained instructors address each person’s

unique needs so that all can feel included in the class. Caregivers are welcome to participate in a yoga class in an adjacent room.

## How Do Participants Benefit?

The classes have grown in popularity, and Ms. Almén says it is amazing to watch just how much a regular practice can help with MS.

Kara Sloboda, for example, was diagnosed with MS at age 15 and has dealt with it for the past 27 years. She says yoga has helped her feel stronger and more peaceful. Thanks to her improved balance, she is able to bend over to pet her dog and pick things up off the floor. Better balance, Ms. Sloboda says, has rid her of her fear of falling and given her the confidence to leave her home. She is able to get out of bed in the morning without asking her parents for help.

Yoga not only improves strength and flexibility; it also helps with managing stress.

“Since stress exacerbates MS symptoms, the ability to make an impact on it is crucial,” Ms. Almén says. “The meditation piece of yoga is so important.” She adds that for people with MS, just being with other people with MS who are going through similar struggles can relieve stress.

The yoga classes offered by the Lou Ruvo Center for Brain Health give people with MS who otherwise wouldn’t go to a gym the opportunity to exercise alongside others with similar conditions. In the process, they learn to pay attention to their bodies and practice self-care.

Classes are available at no cost to participants, thanks to a gift from Gloria and Emilio Estefan that established the Fajardo Patient Services Program (see page 8). For more information on



Kara Sloboda participates in a yoga class

yoga classes for people with MS and/or their caregivers, or to sign up for the next 12-class session, contact Sandy Chapman at 702.776.7000 or chapmas6@ccf.org

## HEALTH AND WELLNESS CONSULTATIONS AVAILABLE



The Lou Ruvo Center for Brain Health offers health and wellness consultations as supplements to traditional visits with a Cleveland Clinic MS neurology provider. Health and wellness consultations give physicians and patients an opportunity to discuss such priorities as nutrition, risk reduction for other comorbidities, exercise, sleep, complementary medicine, lifestyle choices, emotional wellness and pain as they relate to MS. Call 702.483.6000 to make an appointment.



### WHAT IS A SUPPORT GROUP?

An open group that fosters safe, informative, and caring conversations for patients or care partners (family, friends) whose loved ones are living with a brain disorder.

### WHAT TO EXPECT FROM A SUPPORT GROUP:

You may find the benefits of participating in support groups include:

- Dispelling the sense of isolation
- Experiencing a sense of comfort and relief in hearing others and being heard
- Being in a safe environment for discussion of difficult issues and emotions
- Gaining more knowledge of a particular disease and discovering new strategies for coping
- Learning about community resources
- Expanding your supportive network

Support groups are facilitated by experienced professionals, typically social workers. In some instances, respite is available (see page 26).



### SUPPORT GROUPS

More information is online at [keepmemoryalive.org/socialservices](http://keepmemoryalive.org/socialservices)

#### FOR CARE PARTNERS ONLY

**Frontotemporal Disorders (FTD) and Primary Progressive Aphasia (PPA)**  
 First and third Wednesday of the month  
 6:30 p.m. – 8:00 p.m.  
 Contact Ruth Almén: 702.483.6054  
 or [almenr2@ccf.org](mailto:almenr2@ccf.org)

**Memory Loss for Caregivers**  
 Every Wednesday, respite available  
 1:15 p.m. – 2:45 p.m.  
 First time attendees please contact:  
 Donna Munic-Miller: 702.483.6035  
 or [municd@ccf.org](mailto:municd@ccf.org)

**Dementia with Lewy Body**  
**[NEW IN JANUARY 2019]**

2nd Monday of the month; respite available  
 1:15 p.m. – 2:30 p.m.  
 Donna Munic-Miller: 702.483.6035 or  
[municd@ccf.org](mailto:municd@ccf.org)

#### FOR INDIVIDUALS & CARE PARTNERS

**Progressive Supranuclear Palsy (PSP)**  
 First Monday of the month  
 12:00 p.m. – 1:00 p.m.  
 Contact Ruth Almén: 702.483.6054 or  
[almenr2@ccf.org](mailto:almenr2@ccf.org)

**Parkinson's Disease (PD)**  
 Second Tuesday of the month  
 11:30 a.m. - 12:30 p.m.  
 Contact Sandy Chapman: 702.776.7000  
 or [chapmas6@ccf.org](mailto:chapmas6@ccf.org)

**Huntington's Disease (HD)**  
 Third Thursday of the month  
 12:00 p.m. – 1:00 p.m.  
 Donna Munic-Miller: 702.483.6035  
 or [municd@ccf.org](mailto:municd@ccf.org)

# Respite: What Is It and How Can It Help?

Most individuals who provide care and support to a person in cognitive decline don't think of themselves as caregivers. Rather, they consider themselves devoted spouses, children, family members or friends helping a loved one in a time of need.

Here at Cleveland Clinic Lou Ruvo Center for Brain Health, we hear again and again, "I was surprised to discover I had become a caregiver."

Caregivers frequently underestimate the extent of their involvement, which can span:

- Assisting with daily activities such as meal preparation, bathing, dressing and grooming
- Performing household tasks, such as cleaning and doing laundry
- Scheduling and driving to medical and other appointments
- Shopping
- Managing medications and daily dosage schedules
- Handling finances, insurance and legal matters
- Planning social and recreational activities

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"Imagine you were offered a 24/7 job with no holidays. Would you take it?" Dylan Wint, MD, NV Energy Chair for Brain Health Education and Chief, Medical Operations, frequently asks the loved ones of his patients. "Of course they say 'no' because everybody needs a break, and that's what respite is."

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Being a caregiver is both rewarding and challenging. Caring for a loved one with Alzheimer's disease or another dementia can bring families closer together, increase resilience and coping skills, and offer the chance to give back to someone special.

Caregiving can also have a negative impact on physical health and emotional well-being of caregivers themselves, as well as raise legal and financial concerns. That's where respite comes in.

Dr. Wint explains that "when we stay on task all the time, we lose focus and begin to resent the task itself."

Even a short break can be helpful. Respite care can be provided by family, friends, volunteers, in-home agencies, day care or skilled care facilities. Some communities even have programs that help cover the cost of professional respite care.

## We Can Help, Too

Thanks to philanthropic support from individuals, foundations and grants, the Lou Ruvo Center for Brain Health offers an expanding array of respite programs that provide meaningful, engaging activities at no cost to patients, allowing caregivers to take that much-needed break.

- **Memory Café Respite:** With a generous grant from the Engelstad Foundation, we're offering a 90-minute session in three parts:
  - Timeslips, an evidence-based, interactive conversation facilitated by a docent from the Smith Center for the Performing Arts



- Group singing to enhance communication
- Gentle movement to get the mind and body firing at the same time
- **Group music therapy:** A board-certified music therapist uses music to improve quality of life, foster social interaction and assist in patients' treatment
- **NEW, coming in early 2019:** Memories in the Making, an evidence-based art-making program

To expand the support network, our social work team offers connections to community resources beyond our walls.

## ARE YOU A CAREGIVER?

We're here to help you find a new sense of balance as you learn to manage different stressors and establish an effective support network. For information on our education, respite and support programs, please visit [keepmemoryalive.org/socialservices](http://keepmemoryalive.org/socialservices) or call 702.483.6054.



# SPRING INTO HEALTH 'FARE' SENIOR HEALTH EXPO

WEDNESDAY, MARCH 20  
10 A.M. – 2 P.M.

Take control of your health and improve your quality of life.

- Interact with medical professionals from Cleveland Clinic Lou Ruvo Center for Brain Health and throughout the Las Vegas community.
- Enjoy cooking and exercise demonstrations. Get a free dental screening, nutritional analysis, vaccination, and much more.

Registration and information on this free event is available at [keepmemoryalive.org/Spring19](http://keepmemoryalive.org/Spring19) or 702.778.6702

## Lynne Ruffin-Smith Library

Enjoy the guidance of our librarian as you peruse more than 2,000 books, DVDs and pamphlets.

Monday – Friday  
8:30 a.m. – 4:30 p.m.

[LouRuvoLibrary@ccf.org](mailto:LouRuvoLibrary@ccf.org)  
702.483.6033

Or browse at your convenience from home, 24/7, via our e-Library: [keepmemoryalive.org/library](http://keepmemoryalive.org/library)



# Improv: An Unorthodox Source of Strength for Caregivers

By Hannah Brunet, PhD

Caring for a loved one with dementia demands patience, flexibility and teamwork. A group of 19 caregivers bolstered these personal resources last year in a new class, “Improv for Care,” which taught them how to use improvisational skills.

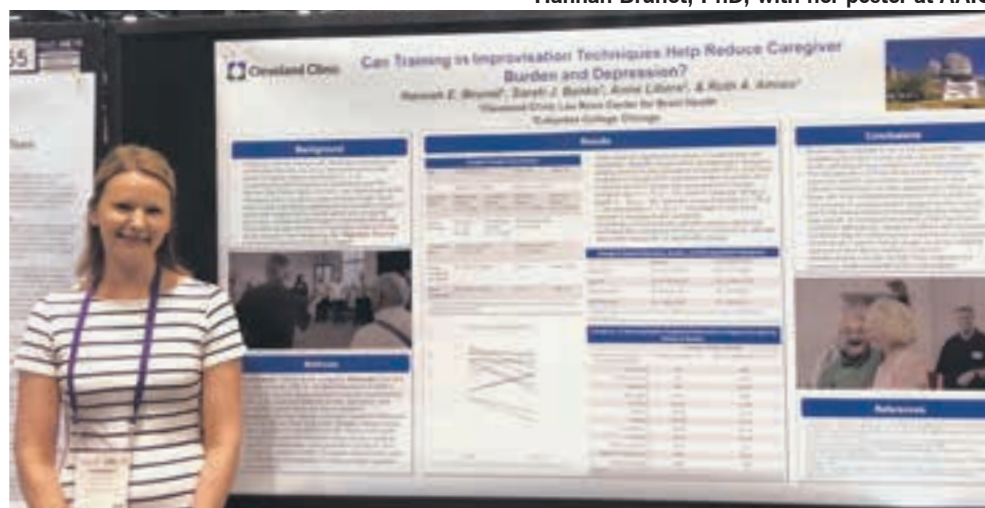
Practicing improv exercises was a naturally fun, engaging way for these caregivers to gain creativity and confidence and build relationships with their peers while adding another tool to their caregiving toolkit.

The class was organized by Ruth Almén, LCSW, Clinical Social Work Manager at Cleveland Clinic Lou Ruvo Center for Brain Health. Ms. Almén and I, a neuropsychology postdoctoral fellow, were interested in studying the effect of the “Improv for Care” class on caregivers’ well-being.

## Building Resilience

Our research showed that caregivers were feeling rather stressed and burdened in this role, a common experience for people caring for a family member with dementia. After completing the class, many caregivers said they felt less stressed and burdened and their mood improved slightly.

The caregivers were also asked about challenges they faced in dealing with their family members’ mood changes. By the time they completed the improv class, they said, their family members’ mood had worsened, which can happen as the brain disease causing dementia worsens. However, the caregivers indicated that their family members’ mood bothered them about as much as it did when they started the classes.



Hannah Brunet, PhD, with her poster at AAIC

This response signals that the caregivers seemed able to better manage their stress after completing the “Improv for Care” class.

## Caregivers Count

I presented these research findings at the Alzheimer’s Association International Conference (AAIC) in July 2018. Attendees, including neurologists, researchers and allied professionals involved in treating patients with Alzheimer’s disease and other dementias, agreed that it is just as important to help caregivers as it is to help the patients for whom they care. The benefit of providing tools and support to caregivers is being recognized as a critical part of the treatment plan for patients with dementia.

The “Improv for Care” class is among the many ways the Lou Ruvo Center for Brain Health provides innovative, cutting-edge treatments and resources for patients and their caregivers. We hope to continue to research the benefits of teaching improv to caregivers in order to understand what works best to help them thrive.

**If you know a caregiver who might benefit from the next session of our “Improv for Care” class, which we provide at no cost to participants thanks to generous philanthropic support, contact Ruth Almén at [Almenr2@ccf.org](mailto:Almenr2@ccf.org) or 702.483.6054.**

## ABOUT THE AUTHOR

Dr. Brunet earned her doctoral degree in clinical psychology, with a focus on geriatric neuropsychology, from Palo Alto University. She completed her internship at the West Los Angeles Veterans Administration Medical Center, where she continued to specialize in the assessment and treatment of older adults with neurological and psychiatric conditions. She is currently completing her postdoctoral fellowship in clinical neuropsychology at the Lou Ruvo Center for Brain Health.



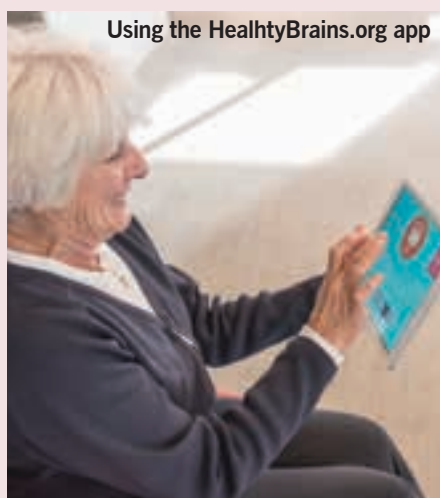
# Nationwide 24/7 Access to Care, Community and Coping Services

The most effective care partners of people with brain disease are well informed and rely on help and support from all available resources to ensure they don't sacrifice their own well-being during their caregiving journey.

At Cleveland Clinic Lou Ruvo Center for Brain Health, we offer myriad educational and support resources not only for patients, but also for caregivers of those with brain disorders. Many of these programs are available at no cost regardless of where individuals receive their neurology care.

Here are but a handful.

## FOR EVERYONE: ANYWHERE, ANYTIME



### HealthyBrains.org: Your Online Guide to Brain Health

While there is no cure for brain disorders such as Alzheimer's disease, the Lou Ruvo Center for Brain Health offers advice on reducing the risk, thanks to generous support from the Caesars Foundation.

HealthyBrains.org, the center's interactive website and mobile app, outlines the Six Pillars of Brain Health: Physical exercise. Nutritious diet. Medical health. Sleep and relaxation. Social interaction. Mental fitness.

Visit HealthyBrains.org to learn more about each component. Join more than 19,000 global visitors who have received a free online brain health self-assessment, signed up for a monthly e-newsletter or shown interest in participating in clinical trials research. Act today to reduce your risk of brain disease.

### Barbara Edmonds Lunch & Learn: At Your Fingertips

More than 100 Lunch & Learn programs have been archived online, thanks to generous philanthropic support (see page 7). Topics span areas of general interest to an aging population, such as Medicare, estate planning and education on specific diseases treated at the Lou Ruvo Center for Brain Health. Visit [keepmemoryalive.org/socialservices](http://keepmemoryalive.org/socialservices).

### Lynne Ruffin-Smith Library

A lending library (open weekdays: 702.483.6033) and e-Library (open 24/7 and accessible online: [keepmemoryalive.org/library](http://keepmemoryalive.org/library)) with more 2,000 books and resources on navigating brain diseases, as well as tips and tricks for care partners.



Dylan Wint, MD, presents at a Lunch & Learn



Verla Niebuhr with a visitor to the Lynne Ruffin-Smith Library



Ruth Almén, LCSW, consults with a client



Dr. Mari with a patient in a virtual visit

## FOR CLEVELAND CLINIC PATIENTS AND THEIR DESIGNATED CARE PARTNERS

### Counseling and Case Management

The Lou Ruvo Center for Brain Health's social services are designed to reduce stress by increasing knowledge, coping skills and a sense of well-being among patients, family members and care partners managing an array of new and ongoing challenges.

We care not only for patients, but for their entire support system, regardless of where in the world this team may be located. Services include:

#### Case Management

- Family and Medical Leave Act (FMLA) paperwork
- Disability paperwork
- Community resource referral

#### Counseling

- Individual therapy for patients
- Family therapy for their caregivers
- Strategies for self-care

We understand that asking for help is never easy, particularly when it comes to recognizing you need help to care for yourself and those you love. But we encourage you to take the first step. Contact [FamilyServicesNV@ccf.org](mailto:FamilyServicesNV@ccf.org) or 702.483.6000.

### MyChart

Stay connected to your Cleveland Clinic healthcare team 24/7 anywhere, anytime, from any device with an Internet connection. MyChart is a secure, personal online health management tool that enables you to message your doctor, view test results, schedule appointments, renew prescriptions and more.

Authorized care partners can access their loved one's MyChart, too, and communicate one-on-one with the patient's Cleveland Clinic team.

To activate your account, please visit [clevelandclinic.org/mychart](http://clevelandclinic.org/mychart).



### Virtual Visits

For people with neurodegenerative diseases, doctor visits can be a major inconvenience. Some individuals have mobility issues. Many are older and need the assistance of a caregiver. For these patients, a virtual visit may be just what the doctor ordered.

Patients whose conditions are stable can schedule routine follow-up visits with their Lou Ruvo Center for Brain Health neurology provider via Cleveland Clinic's Express Care Online. These virtual visits, conducted via videoconference, can save money and time for patients who come to the center from all over Nevada and the Southwest.

Moreover, at the request of a patient, family members can be conferenced in to the visit, which is particularly convenient when care partners are distributed across multiple locations.

Information on how to schedule a visit and a link to download the app can be found online at [clevelandclinic.org/eco](http://clevelandclinic.org/eco).

# Philanthropically Funded Young Scientist Award Accelerates Research and Careers

Neuropsychology research at Cleveland Clinic Lou Ruvo Center for Brain Health got a major boost when Justin Miller, PhD, who had joined the center in 2013, received a Keep Memory Alive Young Scientist Award in 2016 and was subsequently promoted to Director of Neuropsychology in 2018. The award, funded by individual donors and foundations, provides \$75,000 a year for three years to support the work of scientists early in their careers and advance understanding of neurological disease, which can lead to new treatments.

“It means a lot to me to have people in leadership positions recognize my potential as a scientist, especially in a

competitive field like neuroscience,” says Dr. Miller, who came to the Lou Ruvo Center for Brain Health after completing his fellowship in clinical neuropsychology at the University of California, Los Angeles. “This award is enabling me to conduct research I wouldn’t be able to otherwise and providing seed money to jumpstart my program.”

## Reaping the Benefits of “Big Data”

Neuropsychology aims to understand and characterize the relationship of brain function to behavior. Dr. Miller’s primary project is developing a software infrastructure that will facilitate the collection of routine patient data and make it readily accessible for use in research analysis and grants.

“This infrastructure will enable neuropsychology to take advantage of ‘big data,’ which is transforming healthcare and medicine. Neuropsychology is a data-driven field; having relevant data that is easily available and being able to utilize it is essential to neuropsychologists in both clinical work and research,” says Dr. Miller.

This resource has far-reaching applications: It can further understanding of how medical conditions, such as hypertension and high cholesterol, influence cognitive decline and how psychiatric conditions, such as depression and anxiety, affect cognitive functioning. Additionally, it can enable clinicians to practice precision medicine, tailoring treatments to individual patients.

Thanks to the funding — which has fulfilled its promise to accelerate research and scientific careers — Dr. Miller has made rapid progress on his research database, which is being tested during the first quarter of 2019.

“Developing a resource like this will increase the visibility of the Lou Ruvo Center for Brain Health in the neuroscience community and promote multidisciplinary research both within the center and across institutions,” says Dr. Miller.

## MEET THE DONORS

**“The incredible work of talented researchers and scientists like Dr. Justin Miller is something the R&R Partners Foundation is proud to support. The team at Cleveland Clinic Lou Ruvo Center for Brain Health continues to produce work that is changing lives all over the world, and it’s incredible that Dr. Miller and many others are doing this right here in our hometown of Las Vegas.”**

**—Billy Vassiliadis, Chief Executive Officer, R&R Partners**



**Justin Miller, PhD,  
Director of Neuropsychology  
Cleveland Clinic Lou Ruvo Center  
for Brain Health**



**Billy Vassiliadis, Chief Executive Officer,  
R&R Partners**



# Sports Leaders Lay Groundwork for Better Understanding of Head Trauma

“When you’re in the middle of history, you don’t realize you’re making it. People are going to look back at this coalition and be amazed at what you’ve accomplished,” said Nevada Gov. Brian Sandoval during a keynote address at the November 5 meeting of the Professional Sports Brain Health Coalition.

Spearheaded by Cleveland Clinic Lou Ruvo Center for Brain Health’s Associate Medical Director, Charles Bernick, MD, MPH, with encouragement from the UFC’s Senior Executive Vice President and Chief Operating Officer, Lawrence Epstein, the coalition’s mission is “To advance brain safety for those exposed to head impact in sports and across society.”

A group of like-minded leaders from boxing, mixed martial arts, bull riding, hockey, baseball, football, rugby, soccer, equestrian, lacrosse and circus, the coalition is the first of its kind in the United States. Its goals are:

1. Research
2. Education
3. Advocacy

## “Would I Have Played if I’d Known?”

Guest speaker Linden King talked of being drafted in 1977 and spending 13 seasons in the National Football League as a linebacker, using his head routinely “to forcibly move people out of the way.” He says he now has memory problems and doctors have identified tau protein, a biomarker of Alzheimer’s disease, in his brain: “I’m 63 now and I have to ask myself, ‘Ultimately, would I have played if I had known what might happen?’”

Governor Sandoval envisions Las Vegas becoming the brain research center of the world, as well as the nation’s sports capital.



Photo credit: Denise Truscello

Todd Duboef, Marc Ratner, Brett Lashbrook, Sean Gleason, Governor and First Lady Sandoval, Michael Severino, Dr. Charles Bernick and Lawrence Epstein

“Where else in the country would you have a collection of people like those who are around the table today?” he noted.

Dr. Bernick encouraged attendees, who represented a who’s who of Las Vegas’ exploding professional sports scene, to continue their support, which thus far has included guidance, financial contributions and recruitment of research participants.

“Today, we want to cement what the coalition is going to do,” says Dr. Bernick.

## Research Study Expands

Following agreement on the coalition’s mission and goals, he says the group is ready to move toward expanding research on the long-term effects of repeated head trauma in athletes. Professional Bull Riders (PBR) is encouraging its athletes to

join the Lou Ruvo Center for Brain Health’s study that has enrolled more than 820 fighters over the past seven years. With the addition of PBR, the research initiative is being renamed the Professional Athletes Brain Health Study, with plans to incorporate additional contact sports.

Dr. Bernick notes that much progress has occurred nationally, with concussion policies now in place in most sports, restrictions on type of contact and limitations on practice duration in college sports and the National Football League.

As Marwan N. Sabbagh, MD, Director, Lou Ruvo Center for Brain Health, said, “We’re here not just to address the needs of our constituents in this town, but to inform the field in a way that allows us to share what happens here nationwide.”

# Linda White: Celebrating 10 Years of Volunteerism

Linda White knows how nice it feels to be appreciated. Each year, when Cleveland Clinic Lou Ruvo Center for Brain Health hosts an appreciation event for volunteers, “The staff gets up on stage and thanks us in front of our families,” she says. “It’s absolutely over the top and makes us feel like VIPs. But what’s even better is that doctors say thank you to the volunteers year-round.”

Ms. White has been giving her time at the center since 2009. Earlier, she spent years working in technology in Silicon Valley. She has noticed that these two worlds are very different: “I’ve never been thanked as profusely for my contributions in the workplace as here at the Lou Ruvo Center for Brain Health.”

Ms. White toured the center in 2009 before it opened, and remembers the construction hats that guests were asked to wear.

“I was so impressed with the architecture, and with the professionalism of the staff member who was the tour guide,” she recalls. “I felt this was a place where I could really contribute. I wanted to spend time here!”

Now, when people learn she volunteers at the Lou Ruvo Center for Brain Health, they’re very curious about that happens inside the “interesting building,” Ms. White notes. “They want to know what I do as a volunteer, what types of conditions the center treats and how they can become a part of it all.”

## Stepping Into the Patient’s Shoes

A native of Brooklyn, N.Y., who has spent most of her life in California, Ms. White is an enthusiastic Dodgers fan, cooks “brain-healthy food that can be prepared quickly, with lots of grains



Volunteer  
Linda White, 10 years  
at Cleveland Clinic  
Lou Ruvo Center for  
Brain Health

and fish,” plays canasta, read mysteries and spy stories, and loves to travel.

She and her husband, Herb, like to go on cruises but, she says, “My favorite thing is to have my two children and four grandchildren altogether at our Las Vegas home. They go their different ways a bit to enjoy the city but, mostly, we hang out at the house, talk and catch up.”

With her husband and son, Mark, Ms. White owns a business, East-West Blinds & Shutters. As a business owner, she understands all too well how challenging customer service can be, and imagines it must be even more difficult in healthcare.

“I had to take a brief leave of absence from volunteering due to cancer,” says Ms. White. “It was a humbling experience to realize I, myself, was the patient, when I’m typically the one volunteering to help patients.”

## The Value of a Simple Test

In the course of her diagnosis and treatment, Ms. White was most impressed by a very simple assessment: “I had a whole genetic workup from simply spitting in a tube. They screened for everything — except, unfortunately, for Alzheimer’s.”

While research on this very assessment is being conducted (see page 16), Ms. White looks forward to a day when such simple tests will be available to all patients and families visiting the Lou Ruvo Center for Brain Health, and to full clarity around a loved one’s chances of getting Alzheimer’s disease.

Until then, “Please keep treating patients and volunteers as VIPs,” she says. “You say thank you in spades, and we all appreciate it.”

**If you’re interested in volunteering, call 702.331.7046.**

# Planned Giving: Expressing Your Personal Values, Advancing Our Shared Vision

Built on the power of one family's promise, Keep Memory Alive aims to fund the most effective and innovative research and caregiver programming for patients and families affected by brain disorders.

Cleveland Clinic Lou Ruvo Center for Brain Health is the sole recipient of Keep Memory Alive's support. In 2019, as the center marks its 10<sup>th</sup> anniversary, gift planning continues to build its legacy, offering supporters a way to make a lasting impact.

## How It Works

Gift planning is a creative process that allows you to express your personal values by integrating your charitable, family and financial goals. A variety of options are available for you to plan for tomorrow today.

In addition to making a current outright gift (writing a check, transferring securities or signing a multi-year pledge), you can choose a life-income gift, which pays you and/or your spouse an income for life, or a testamentary gift, which is made after your death.

## What to Give

Each of these assets offers different advantages, such as tax benefits and ease of transfer:

- Cash/check
- Stocks, bonds, mutual funds



Renae DeLucia, left, and Jody Ghanem of the Lou Ruvo Center for Brain Health development team

To learn more or for a copy of our "Ways to Give" brochure, please contact our development team at [DonateNevada@ccf.org](mailto:DonateNevada@ccf.org) or 702.263.9797.

- Real estate
- Tangible personal property (art, jewelry)
- Life insurance policy
- Retirement plan assets and/or IRAs
- Business and/or partnership interests

## How to Give

Different giving vehicles offer various advantages, including gift, income, estate and capital gains tax benefits, which can maximize the benefits to your family and Cleveland Clinic.

## Deferred or Life-Income Gifts

- Gift annuity
- Charitable remainder trust
- Charitable lead trust
- Retained life estate

## Testamentary Gifts

- Bequests
- Life insurance
- Retirement plan assets

## Family Philanthropic Fund

- Designed to engage your whole family in giving and to establish a legacy of philanthropy

## HOLLY LYNN HENRY: A FINAL GIFT

Holly Henry's father, Henry — or Hank as he referred to himself — had already been diagnosed with Alzheimer's disease when Curt Warren met him.

"He lived across the street from my wife, Valerie, and me," Mr. Warren recalls.

In her father's memory and as a tribute to Larry and Lou Ruvo, with whom she and her husband were friends, Holly Henry identified Keep Memory Alive in her estate plans.

When Ms. Henry passed in 2017, she made her final gift to Keep Memory Alive.

"Her desire was to help as many families as possible and, perhaps, achieve a treatment, if not a cure, for this disease," says Mr. Warren, who serves as executor of Ms. Henry's estate. "Valerie and I know Holly was delighted to help with this cause, and would be thrilled to have her posthumous gift recognized as a model in hopes others, too, might give."



# Memory Gems: Our LAGOS Legacy

Before jeweler Steven Lagos' grandparents developed Alzheimer's disease, they were vibrant, compassionate, hard-working people. Even in their later years, they were actively engaged in hobbies and activities.

"Then, all of that changed," Mr. Lagos recalls.

He notes that it's tough when someone you love is stricken with any disease, but Alzheimer's feels especially difficult because "you watch them slowly slip away. And they flash in and out, which makes it harder. You still see glimpses of their personalities before the disease, and then they're gone again."

When his mother became the caregiver to his grandmother, he realized just how physically and mentally debilitating the experience can be.

"Other diseases mainly affect the person suffering, but it struck me that Alzheimer's really affects caregivers as well," Mr. Lagos says.

Seeing the toll that brain disease was taking in his own family, Mr. Lagos 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.

Through a business connection, Steven Lagos met Larry Ruvo, Chairman and Founder of Keep Memory Alive, who invited him to co-host the second annual Power of Love® gala with Wolfgang Puck and John O'Hurley.

Mr. Lagos remembers the evening well: "There were about 75 people at the event and I provided the only auction item, which was a pearl necklace with a custom clasp that I designed. We wound up raising \$86,000 for the charity that night."

At another gala, he brought 30 carats of diamonds and offered to design a special custom piece for a lucky winner. Two bidders drove the price up to \$260,000, and Larry Ruvo asked if he would be willing to design two pieces.

"Of course, I agreed," Mr. Lagos says. "We raised \$560,000 that night just on the auction piece alone."

LAGOS has been supporting Keep Memory Alive ever since. In 2015, LAGOS produced an exclusive Sterling Silver Signature Caviar collection, inspired by the intricate



 Kristie Nicolosi, left, with Steven Lagos, Philanthropist and Founder/Creative Director of LAGOS

curvature of Keep Memory Alive's Frank Gehry-designed headquarters (LAGOS.COM/keepmemoryalive). One hundred percent of the sales price benefits Keep Memory Alive in support of Cleveland Clinic Lou Ruvo Center for Brain Health.

In February 2018, *Town & Country* featured the magazine's first-ever Jewelry Awards. Mr. Lagos was recognized among the philanthropists of the year for his work with Keep Memory Alive.

He says proudly, "In 2019, LAGOS will surpass \$1 million donated to the cause."

The LAGOS team visits the Lou Ruvo Center for Brain Health



MEMORIES *like jewelry* ARE CHERISHED TREASURES



# LAGOS

## KEEP MEMORY ALIVE COLLECTION

Presenting an exclusive collection to support *Keep Memory Alive*. Each crafted, sterling silver design is inspired by *Keep Memory Alive's* architectural masterpiece in Las Vegas created by Frank Gehry.

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"IT'S ABOUT RAISING AWARENESS AND GETTING INVOLVED TO HELP THE PATIENTS AND THEIR FAMILIES."

— STEVEN LAGOS

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*100%* of your purchase benefits *Keep Memory Alive*.

[LAGOS.COM/keepmemoryalive](http://LAGOS.COM/keepmemoryalive)

**KEEP MEMORY ALIVE**

Supporting the Mission of Cleveland Clinic Lou Ruvo Center for Brain Health

ALZHEIMER'S | HUNTINGTON'S | PARKINSON'S  
MULTIPLE SYSTEM ATROPHY | MULTIPLE SCLEROSIS

# A Month of Memories: November 2018

November is National Alzheimer’s Disease Awareness Month, so designated by President Reagan. Each November, Keep Memory Alive leverages this recognition to raise awareness and funds for this devastating disease that affects so many patients who come through our doors at Cleveland Clinic Lou Ruvo Center for Brain Health. We also honor their friends and family who serve as dedicated caregivers because November is also National Family Caregiving Month.

Here’s a sampling of some of our special events:

## WORLD’S LARGEST GIN AND TONIC: NOVEMBER 5

The world’s largest gin and tonic was mixed at the Palms Casino Resort in Las Vegas in a 300-gallon glass, requiring more than 400 bottles of Empress 1908 gin, 165 gallons of tonic water and approximately 5.5 gallons of lime juice.

“We are so excited to be part of breaking a Guinness World Records title which, in turn, benefited an amazing cause for our community,” says Raul Faria, President of the Las Vegas chapter of the United States Bartenders Guild, which organized the creation of the record-breaking beverage.

The event raised more than \$10,000 for Keep Memory Alive. Guests who donated \$50 to the nonprofit were allowed to be part of the record by pouring a bottle of gin into the drink.

Presentation by Guinness World Records  
Credit: Jeff Ragazzo



## GIVING THANKS, A HOLIDAY SPECTACULAR: NOVEMBER 7

Perhaps one of the only holiday festivities some of our patients and their caregivers can attend, this heartwarming “Senior Prom”-themed event welcomed 180 guests, who enjoyed a three-course plated lunch from Master Chef Gustav Mauler and a souvenir photo. Many were inspired to get up and dance to the old standards performed by the University of Las Vegas’ Jazz and Commercial Music Undergraduate Combo and Las Vegas singer Chadwick Johnson. The entire event, which was held at the Keep Memory Alive Event Center on the Lou Ruvo Center for Brain Health’s campus, was made possible by generous philanthropic support.

## A THANK YOU TO SUPPORTERS: NOVEMBER 30

DelFrisco’s Double Eagle Steakhouse hosted a reception for community partners and Month of Memories supporters and beneficiaries. Guests enjoyed delectable beverages and tidbits from this world-class steakhouse. A highlight was the joy on Asela Martinez’s face as she accepted a gift certificate for dinner at DelFrisco’s in recognition of her year-round commitment as a caregiver to her daughter, Jenny, who has multiple sclerosis.

L to R: Matt Plourde and Shaina Meyer from neurorehabilitation with Jenny and Asela Martinez



## THE RUVO STORY: NOVEMBER 1

Vegas PBS and the Lou Ruvo Center for Brain Health collaborated to present a special preview of “The Power of Love: The Story of Lou Ruvo and Cleveland Clinic Lou Ruvo Center for Brain Health.”

The documentary, which aired on Vegas PBS throughout the month of November, tells the story of the Ruvo family’s rise in Las Vegas; their “see and be seen” restaurant, The Venetian; and how Larry’s promise to his father, Lou, has lived on for 25 years, marked by the founding of the Lou Ruvo Center for Brain Health, which in 2019 celebrates its 10th anniversary.

The preview served as a fundraiser to support future healthcare-focused local programming by Vegas PBS, which the television station hopes will capture the attention of other PBS affiliates, ultimately airing nationally.

Guests enjoyed specially created brain-healthy foods prepared by award-winning chefs Gustav E. Mauler, Mark Sandoval, Rick Moonen, Benoit Cornet, Roy Ellamar and Tal Ronnen, with accompanying beverages compliments of event sponsor Southern Glazer’s Wine & Spirits of Nevada.

Missed the documentary? Watch it at [vegaspbs.org/shows/power-of-love](http://vegaspbs.org/shows/power-of-love)



Bruce Spotleson, left, with Angie Ruvo and Nate Tannenbaum at the PBS special preview

## PARTNERS IN GENEROSITY

Throughout the month, Las Vegans participated in a variety of opportunities to support Keep Memory Alive, from specialty cocktails to “round up” promotions at cash registers, with the following community partners:

7th and Carson	Delmonico Steak House	Honey Salt	North Italia	The Den LV
Andiron Steak & Sea	Desert Pit Stop	Jake’s Bar	Numb Bar & Frozen Drinks	The Hideout
Anna Marie’s	District 1	Jammyland	Odd Fellows	The Kitchen at Atomic
APEX BAR at Palms Casino Resort	El Cortez	JC Carillo Team/Huntington & Ellis Real Estate	Off the Strip Bistro	The Liquor Outlet
Atomic Liquor	Emeril’s Fish House	Lacomida	Palms Casino Resort	The Martini
Bears Best	Empress Gin	Le Pho	Palomino Club	The New Pioneer
BIG DOGS Brewery	Fire Fly	Le Thai	Paradise Cantina	The Pint
Bikini Bay	Five Star Liquor	Lindo Michoacan	Piero’s	THERAPY
Bin 702	Flippin Good Burgers	Liquor Stop	Red Rock Country Club	Timbers
Black Mountain Grill	Flock & Fowl	Liquor World	Regency Casino	Torrey Pines Pub
Blue Hawk Tavern	Gin Mill	Lola’s	Remedy’s	Town Center Lounge
Bonito Michoacan	Gold Mine Tavern	Los Cucos Mexican Café	Rounder’s Grilling & Gaming	TPC Las Vegas
Canter’s	Grape Expectations	Mango’s	Seasons Grocery	TPC Summerlin
Carson Kitchen	Grape Street	MB Steakhouse	Settebello	Treasure Island
Centerfold’s	Greens and Proteins	Milos Inn and Wine Bar - Boulder City	Sporting Chance	Turmeric
Chimera Golf Course	Herringbone	Nacho Daddy	Susan Giebler	Via Brasil
Crown Liquor	Hilton Grand Vacation Club		Tacos and Beers	Vintner Grill
Crown Royal	Hogs & Heifers			Viva Mercado
Del Frisco’s				

# Event Hosts Help Raise Funds and Awareness for Keep Memory Alive

Throughout 2018, the Keep Memory Alive special events team was busy collaborating with enthusiastic third-party event hosts who selected Keep Memory Alive as their charity of choice. Here are but a few examples.

## AUDI HENDERSON LAKE LAS VEGAS CLASSIC

Fun for hard-core, recreational and non-golfers alike, the second annual Lake Las Vegas Classic built upon the success of last year's inaugural event.

On Friday, golfers experienced the magnificent Reflection Bay Golf Club at Lake Las Vegas, a Jack Nicklaus Signature Design course.

Festivities continued on Saturday evening with one of the hottest foodie events in Las Vegas, The Culinary Feast. More than 1,000 guests sampled the best of the best from local chefs, wineries, breweries,; enjoyed a silent auction; and danced the night away.

Participating restaurants included: TAO, LAVO, Zenshin, Beauty & Essex, Hash House A Go Go, Marssa Steak & Sushi, STK Steak, Texas de Brazil Steakhouse, Ethel M Chocolates, Capital Grille, Foundation Room and Shake Shack.



## WHISKEY ON THE ROCKS

On October 5, Total Wine & More hosted the second annual Whiskey on the Rocks at Red Rock Casino, Resort and Spa in Las Vegas. The event featured a great array of whiskey vendors around an exclusive 21+ pool area, The Pond.

The check (see photo) for \$10,000 from Edrington for Keep Memory Alive and Cleveland Clinic Lou Ruvo Center for Brain Health is in addition to Total Wine & More's contribution from a portion of proceeds from this sold-out event.



Left to right: Marjorie Alquizalas, Nic Villalon, Jim Weiland, Larry Ruvo, Marwan Sabbagh, MD, Mike Weber, Robert Hammock, David Sardina



## THE CHANGE THAT MAKES A DIFFERENCE: ANOTHER WAY TO FIGHT BRAIN DISEASE

A Penny for Your Thoughts™ is a community-based, grassroots fundraising program conceived by Camille Ruvo and Keep Memory Alive to encourage all levels of giving. One hundred percent of funds raised advance Cleveland Clinic Lou Ruvo Center for Brain Health's mission to support family caregivers of those with degenerative brain diseases.

In November, Las Vegas middle schools Sig Rogich and Victoria Fertitta engaged in their annual challenge to see which school could collect the most spare change to fight brain disease. This year, a newcomer joined the competition: Faiss Middle School.

To educate the students on brain health and inspire them to participate, the Lou Ruvo Center for Brain Health's Dylan Wint, MD, NV Energy Chair for Brain Health Education; and HealthyBrains.org team Project Manager Kat Hartley spoke at each school, accompanied by mascot Captain Cortex.

The "Miracle Minute" fundraiser on November 16 was a lively success, with students producing spare coins from the couch, the car seat, and from friends and family to deliver \$12,000 in change in a single minute, as tallied by Red Rock Casino, Resort and Spa, who proclaimed Sig Rogich Middle School the 2018 winner.

With the support of our community friends and partners of all ages, we can all Keep Memory Alive.

## HAVE A PENNY? GIVE A PENNY

Do you know a workplace, business or school that would like to help? Ask them to contact us at 702.263.9797.



L - R: Faiss Principal Roger West, Rogich Principal Suzie Harrison-Rollins and Fertitta Principal Dr. Callin Ellis

# Keep Memory Alive Event Center: Facilitating Parties With a Purpose

The Keep Memory Alive Event Center's marketing materials promise guests the opportunity to "meet well and do good." That's exactly what guests and staff alike say they most appreciate about the stunning Frank Gehry-designed space.

"Our clientele love the fact that 100 percent of the proceeds raised by hosting an event at the Keep Memory Alive Event Center goes to support Cleveland Clinic Lou Ruvo Center for Brain Health.

It's such an elegant arrangement. Groups get to host memorable events at the Center and, in return, the Center gets to raise proceeds to help keep memory alive," says Maggie Tuitele, Director of Sales and Marketing.

Given the projections on Alzheimer's disease alone — that one-third of



**Maggie Tuitele**

Americans will have the disease by age 85 — it's not surprising that most guests appreciate this synergy. Factor in Parkinson's disease, multiple sclerosis and the other brain disorders treated at the Lou Ruvo Center for Brain Health, which is supported by revenue from the Event Center, and it's almost certain that every visitor will have a personal connection to someone with one of these disorders.

"MSNBC and Telemundo selected our Event Center for a live town hall meeting with the Democratic candidates during the 2016 presidential race. Within a week, we booked and executed this event, which gave not only Hillary Clinton and Bernie Sanders great national exposure, but our center as well," remembers Gina Sinclair, Director of Operations.



**Gina Sinclair**

## A Frank Gehry Landmark

"Choosing to host an event at the Keep Memory Alive Event Center is to host an event in an architectural and cultural landmark, an experience of the same caliber as other Gehry masterpieces such as the Guggenheim Museum in Bilbao, Spain; the Walt Disney Concert Hall in Los Angeles; or the Louis Vuitton Foundation in Paris," says Ms. Tuitele.

She continues, "The experience here at the Keep Memory Alive Event Center is elegant, nuanced and created with a mindfulness for every detail, from the thought-provoking design of the exterior of the building, to the 199 awe-inspiring windows that punctuate the 75-foot ceiling, to the perfect saturation of acoustics and lighting of the room, to the custom Gehry-designed Narumi bone china and linens, to the fine art that accents our space. When you attend an event at the Center, you sense immediately on arrival that you're going to experience something truly exceptional and meaningful."

**The Keep Memory Alive Center is the most complex Frank Gehry design in the world. It was an ambitious undertaking coordinated across multiple continents, resulting in one of the world's most compelling and thought-provoking venues for galas, receptions and events.**



Photo credit: Matthew Carbone Photography



The Event Center team: L – R: Meg Reinking, Gina Sinclair, Armando Chirinos, Maggie Tuitele, Paul Alvarez and Gracious Peterson



**KEEP MEMORY ALIVE  
EVENT CENTER:**  
*an award-winning venue*

*The Stella Awards*

**“Best Conference Center in the  
Far West Region”**

2017, 2018

*Wedding Industry*

*Professionals Association (WIPA)*

**“Venue of Excellence Award”**

2015, 2016, 2017

*Unique Venues*

**“Best Venue for Expos and Tradeshows”**

2017

*WeddingWire Editors’ Pick*

**“Best Architecture”**

2016

*BizBash*

**“Best Event and Wedding Venue**

**Top 3 National Finalist”**

2014



**KEEP MEMORY ALIVE  
EVENT CENTER**

**MAKE YOUR OWN MEMORIES**

The Keep Memory Alive Event Center is available for rent for your personal or professional event. Preview the venue online at [KMAEventCenterLasVegas.com](http://KMAEventCenterLasVegas.com) or contact 702.263.9797 or [eventcenter@keepmemoryalive.org](mailto:eventcenter@keepmemoryalive.org).

# Visitor Photo Gallery



Larry Ruvo, left, and Marwan Sabbagh, MD, right, welcome Irving Azoff



Northcap Commercial visits



Kikie Priddy and Robert Priddy



Keep Memory Alive Board Member Michael Severino welcomes Kevin Cronin of REO Speedwagon and Tom Consolo

## PROFESSIONAL SPORTS REPRESENTATIVES REGULARLY VISIT

Professional Sports representatives regularly visit Cleveland Clinic Lou Ruvo Center for Brain Health. See page 32 for more information and updates on the Brain Health Sports Coalition.



Keith Baulsir of the Vegas Golden Knights with Renae DeLucia



Linden King, 3rd from right, visits with Charles Bernick, MD, MPH, far left, about the Professional Athletes Brain Health Study



Brett Lashbrook of the Las Vegas Lights



Don Logan, left, visits with Jody Ghanem and Charles Bernick, MD, MPH

## Visitor Photo Gallery *continued*



Chef Daniel Humm and Larry Ruvo



Peter and Angela Dal Pezzo with Diane Herrera, center, flanked by the Brain Imaging Research team



### UP CLOSE AND PERSONAL WITH ANDREA BOCELLI AND FRIENDS



Photo credit: TAMZ

An event hosted by Veronica and Andrea Bocelli, Gloria and Emilio Estefan, and Cleveland Clinic — Up Close and Personal Featuring Andrea Bocelli and Friends — was held December 6 at the One Island Park Marina in Miami Beach, Florida. In addition to a private performance by Andrea Bocelli, the event included performances by soprano Larisa Martinez and pianist Lola Astanova, and a live auction of Romero Britto artwork. The event was supported by Acquavella.

“We are committed to having a major impact on brain disease over the next decade,” said Cleveland Clinic CEO and President Tom Mihaljevic, MD. “And we couldn’t do that without the help of generous people like those who hosted, sponsored and attended the event.”



L – R: Larry Ruvo, Gloria Estefan, Andrea Bocelli, Emilio Estefan and Veronica Bocelli



L – R: Dan and Kelly Pettit with Camille and Larry Ruvo

# Dementia Friendly Southern Nevada Offers Community Memory Screenings



One in six Nevadans aged 45 or older experiences subjective cognitive decline (SCD): an internally recognized perception of a memory or cognitive problem. Only half of these individuals have talked to a doctor about their concerns. Further, more than 75 percent of individuals with SCD have at least one chronic condition, which may indicate that a memory problem could be reversed or managed.

SCD can interfere with quality of life; according to the Alzheimer's Association and the Centers for Disease Control and Prevention, among Nevadans with SCD, 26.5 percent needed help with household chores, 30.1 percent had to give up day-to-day activities and two in five individuals said that SCD interfered with social activities, work or volunteering.

Advocates with Dementia Friendly Southern Nevada strive to reverse these trends by making our fellow citizens aware that they can successfully manage memory and cognitive challenges, but first they must acknowledge and accept what is going on inside their own brains. In that spirit, healthcare professionals from Cleveland Clinic Lou Ruvo Center for Brain Health and second-year nursing students from the College of Southern Nevada have been administering free memory screenings throughout the city. These assessments highlight the importance of cognitive health.

## A Significant First Step

A memory screening is a simple, safe healthy brain checkup that tests memory and other thinking skills. The screening includes a series of questions and tasks that help indicate if someone needs a comprehensive medical evaluation. This tool is not used to diagnose any particular illness, nor does it replace consultation with a physician or other clinician.



Members of Dementia Friendly Southern Nevada advocate for memory screenings

Memory screenings are a significant first step in detecting memory problems. According to Donna Munic-Miller, PhD, a psychologist at the Lou Ruvo Center for Brain Health, "It is important that people who experience changes in their memory be evaluated as quickly as possible because some memory problems — like those caused by vitamin deficiencies or thyroid issues — can be readily treated. Moreover, treatments tend to work better earlier in the intervention."

Dementia Friendly Southern Nevada is dedicated to creating a more dementia-friendly state. The organization is scheduling memory screenings throughout 2019. Churches, community and senior centers, clinics and health fairs are ideal locations to organize a memory screening. To arrange a screening for your affinity group, please contact Isaac Santa-Ana at [santai@ccf.org](mailto:santai@ccf.org) or 702.685.7072, or visit [dementiafriendlynevada.org](http://dementiafriendlynevada.org).

## ADDITIONAL MEMORY SCREENINGS AT CLEVELAND CLINIC

The Lou Ruvo Center for Brain Health, the convening organization behind Dementia Friendly Southern Nevada, provides two additional options for brain health screenings:

- **HealthyBrains.org** offers a free, online brain health self-assessment 24/7 via its website and app.
- **Balance and memory screenings:** To mark National Fall Prevention Day each September, the center's neurorehabilitation and research teams collaborate to offer screenings. Call 702.483.6032 for information.



Donna Munic Miller, PhD, conducts a memory screening on National Fall Prevention Day

# KEEP MEMORY ALIVE

Supporting the Mission of Cleveland Clinic Lou Ruvo Center for Brain Health



ALZHEIMER'S | HUNTINGTON'S | PARKINSON'S  
MULTIPLE SYSTEM ATROPHY | MULTIPLE SCLEROSIS



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[keepmemoryalive.org](http://keepmemoryalive.org)  
[clevelandclinic.org/Nevada](http://clevelandclinic.org/Nevada)

## PLEASE JOIN US FOR THE 2019 POWER OF LOVE® GALA

Celebrate **Lionel Richie** for his iconic music and honor **Lonnie Ali** with a Keep Memory Alive Caregiver Hero Award. Dine on a one-time menu provided by world-renowned chefs **Wolfgang Puck** and **Daniel Humm**.

Power of Love® is a unique, one-of-a-kind experience that raises funds and awareness for Cleveland Clinic Lou Ruvo Center for Brain Health.

**SATURDAY, MARCH 16, 2019**

MGM GRAND GARDEN ARENA, LAS VEGAS, NV

### FOR MORE INFORMATION

[keepmemoryalive.org/pol](http://keepmemoryalive.org/pol) • 702.263.9797 • [PowerOfLove@keepmemoryalive.org](mailto:PowerOfLove@keepmemoryalive.org)

*Proceeds benefit Cleveland Clinic Lou Ruvo Center for Brain Health*



Photo by Dennis Leupold

