

NEW ALS THERAPIES
OFFER HOPE

SCARLESS SURGERY TO TREAT
CUSHING DISEASE

UCI Health

SUMMER 2022

live well

EXCEPTIONAL HEALTHCARE FOR SOUTHERN CALIFORNIA

Riding High

Unique spine surgery restores
elite athlete's active lifestyle.



A DIFFERENT KIND OF HEALTHCARE SYSTEM



As Orange County's only academic health system, we at UCI Health have a tremendous responsibility to the people of our county. We are the place they turn to for rare or complex medical issues or when they need specialized services that are simply unavailable at community hospitals. It is also our duty to conduct research that benefits patients in our region and beyond. And as teachers of the next generation of healthcare providers, we pride ourselves in offering the most advanced medical

education — one that emphasizes treating the whole patient with compassion.

This issue of *Live Well* highlights some of the people and programs that make UCI Health exceptional and demonstrate the importance of an academic health system to our community. On page 6, please read the story of an elite athlete who was sidelined by a severe spinal condition. Our extraordinary spine surgery team was able to restore this patient to health with a rare procedure that only a handful of U.S. spine surgeons can perform.

On page 12, read about our treatment of a patient with Cushing disease — a potentially deadly condition caused by a tumor on her pituitary gland. Our expert skull base surgeons performed a delicate procedure to remove the benign mass with instruments inserted through the patient's nose. The result: a quick recovery with no scarring. On page 10, learn why blood donations, which are essential for operating Orange County's busiest and only Level I adult and Level II pediatric trauma center, are in short supply and how you can help save lives by becoming a regular blood donor.

Because we strive to offer the highest standard of care, our programs are regularly reviewed by national safety and quality organizations. We are honored to announce that our UCI Health bone marrow transplant and cellular therapy program achieved accreditation for meeting the national standard of excellence. Treatments offered by this program are at the forefront of cancer care. Also, the National Cancer Institute (NCI) has recertified our Chao Family Comprehensive Cancer Center as meeting the highest standards for comprehensive cancer centers. This reaffirms our standing among the nation's elite cancer institutions and as the only NCI-designated comprehensive center based in Orange County.

Whether we are providing you with outstanding primary care focused on prevention or highly specialized treatment for challenging diseases, our goal each day is to improve the health of Orange County residents and give hope to every patient who comes through our doors.

Sincerely,

Chad T. Lefteris, FACHE
Chief Executive Officer
UCI Health

UCI Health

VICE CHANCELLOR, UCI HEALTH AFFAIRS
Steve A.N. Goldstein

CHIEF EXECUTIVE OFFICER, UCI HEALTH
Chad T. Lefteris

DEAN, UCI SCHOOL OF MEDICINE
Michael J. Stamos

EXECUTIVE MARKETING DIRECTOR
Brian M. O'Dea

ASSISTANT DIRECTOR, COMMUNICATIONS
John Murray

ASSISTANT DIRECTOR, MARKETING
Camila Hernandez

MANAGING EDITOR
Kristina Lindgren

DESIGN, EDITORIAL & CONTRIBUTORS
Moontide Agency

ART DIRECTOR
Yuiko Sugino

EDITOR
Shari Roan

COPY EDITOR
Laura Watts

For comments or questions, contact
UCI Health Marketing & Communications at
333 City Blvd. West, Suite 1250, Orange, CA 92868
714-456-5496

Information in this magazine is not meant to
replace the advice of your physician.

SUPPORT UCI HEALTH

Few things in life matter more than your health. As Orange County's only academic medical system, UCI Health is pushing the frontiers of lifesaving research while improving health and wellness in our community and beyond.

We cannot succeed without you. Please consider becoming an active partner in charting our future path. With your support, we will make new medical breakthroughs, redefine patient care, educate the next generation of health professionals and promote physical and mental well-being in our communities.

To make a gift supporting the expansion of UCI Health, to thank a provider or honor the memory of a loved one, call 714-456-7350 or visit ucihealth.org/giving. Your gift also supports UCI's Brilliant Future campaign.

BRILLIANT FUTURE
THE CAMPAIGN FOR UCI

A NEW ERA IN THE FIGHT AGAINST ALS

WRITTEN BY PATRICK J. KIGER

When Dr. Namita A. Goyal was starting out as a neurologist at Massachusetts General Hospital in Boston in the mid-2000s, she was upset to see young, otherwise healthy people diagnosed with amyotrophic lateral sclerosis (ALS), a fatal neurological disorder that gradually robs a person of the ability to walk, speak, swallow and breathe. "It was just devastating to watch healthy, well-muscled patients decline every few weeks," she recalls.

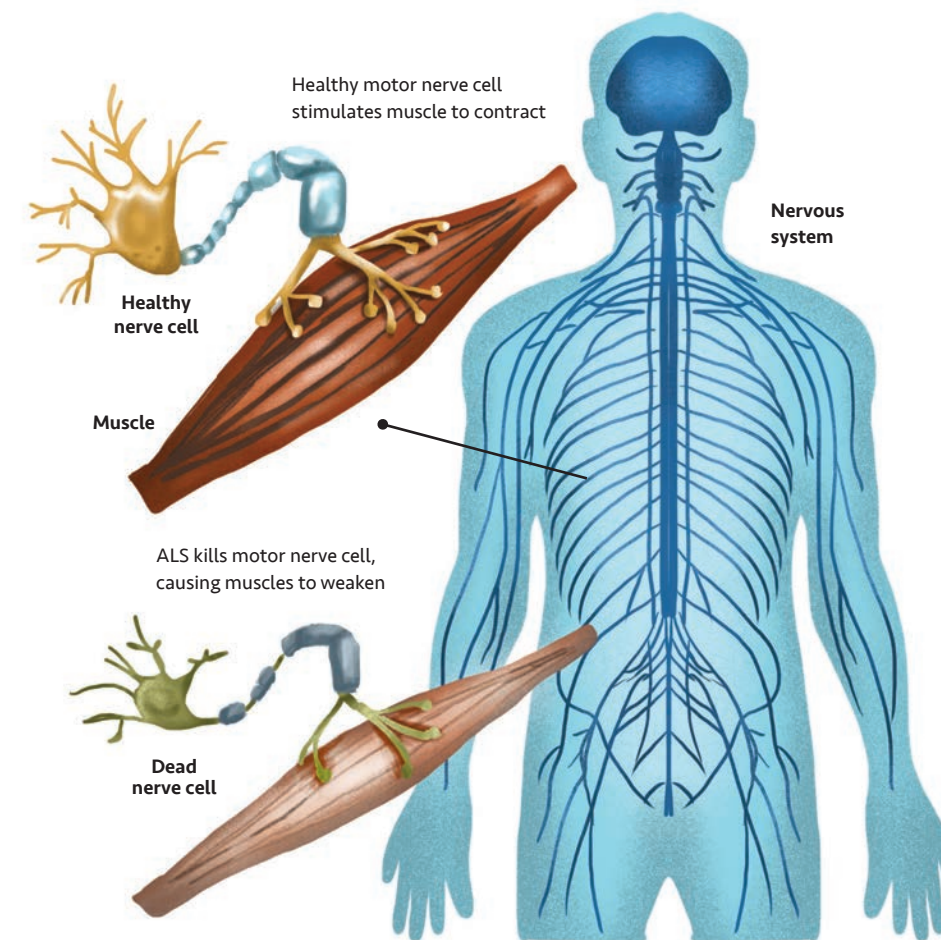
That's why Goyal, co-director of the UCI Health ALS & Neuromuscular Center, has devoted herself to slowing the disease's progression — and perhaps someday to finding a cure.

There is reason for hope, the nationally regarded ALS researcher says, pointing to 12 ALS clinical trials currently underway at UCI Health. These include three potential treatments that are in phase 3 studies (the last stage of testing before U.S. Food and Drug Administration consideration for approval).

"This is a new era," says Goyal, noting that the number of drug trials for ALS has never been greater. "I've heard from many patients that their neurologist or someone else told them they should get their affairs in order, but our message is very different. I talk to them about how we're going to fight this tooth and nail."

One potential therapy under study is Amylyx Pharmaceuticals' drug AMX0035, which showed promise in slowing functional decline in early phase trials.

"ALS is thought to be very complex, a potential interplay of many different mechanisms — oxidative and mitochondrial stressors, inflammation, cell signaling, metabolism, protein mishandling — possibly one triggering another and becoming a vicious cycle, which at the end causes motor neuron cell death," she says. Patients typically



survive two to five years after the onset of symptoms.

AMX0035 — which combines two drugs, sodium phenylbutyrate and taurursodiol — is thought to "block neuron damage and inflammation by reducing mitochondrial dysfunction," she adds. Mitochondria are the engines that supply energy to cells.

UCI Health also is participating in an important study testing an oral form of edaravone, an existing ALS drug that now is given intravenously to slow the loss of function in patients. "The challenge with edaravone is that it's a little bit more invasive to administer — the patient has to get the IV infusion the first month for

14 days in a row," Goyal says.

Although neither drug promises to stop ALS in its tracks, they may buy patients more time. "Adding months to a condition that now progresses within two to four years is significant," she says.

Goyal is excited that ALS research is being pushed forward faster than ever as scientists around the world collaborate with pharmaceutical companies, physicians and patients to develop new drugs and target new pathways.

"With all these efforts, we are potentially on the verge of a breakthrough for this disease," she says. "And we are studying many of these leading-edge ALS therapies right here at UCI Health." ■

Learn more about ALS care and treatment at ucihealth.org/alscenter





BONE MARROW TRANSPLANT PROGRAM EARNS ACCREDITATION

The UCI Health Chao Family Comprehensive Cancer Center's adult bone marrow and stem cell transplant program has received accreditation by the Foundation for the Accreditation of Cellular Therapy (FACT) for meeting the national standard of excellence in cellular therapy programs. These advanced procedures can prolong the survival and even cure many patients with high-risk blood cancers, including leukemia, lymphoma and myeloma.

The FACT accreditation also paves the way for the program to offer leading-edge cellular immunotherapy treatments and access to novel clinical trials. Launched in 2020, the UCI Health Hematopoietic Stem Cell Transplant and Cellular Therapy Program allows residents to receive this intensive treatment close to home while also serving patients from across Southern California.

FACT-accredited organizations voluntarily seek and maintain accreditation through a rigorous process, demonstrating the shared belief that adhering to the highest standards in patient care is paramount.

"FACT accreditation is extremely important for any transplant program, both to ensure quality of care and to meet requirements of third-party payers," says Dr. Stefan O. Ciurea, UCI Health hematologic-oncologist and director of the stem cell transplant and cell therapy program.

"We started this program less than two years ago, and our team has worked extremely hard to obtain full accreditation of all components of an established program, including autologous and allogeneic transplantation, as well as CAR T-cell therapy."

UCI RECERTIFIED AS COUNTY'S ONLY COMPREHENSIVE CANCER CENTER

The National Cancer Institute (NCI) has again recognized the Chao Family Comprehensive Cancer Center as one of the nation's top cancer centers, renewing its "comprehensive" status.

The UCI Health cancer center is among 52 NCI-designated U.S. comprehensive cancer centers and the only one based in Orange County where people with advanced-stage or treatment-resistant disease can access early-phase clinical trials of the very latest therapies.

"The Chao Family Comprehensive Cancer Center is an outstanding asset for the more than 3 million residents of Orange County and patients far beyond," says Dr. Steve A.N. Goldstein, vice chancellor, UCI Health Affairs. "We are honored that the NCI has recognized our cancer center's excellence in patient care, basic and translational research, clinical trials and community engagement — placing it among the few identified as the very best in the nation."

The peer-review NCI designation process is among the most rigorous in the United States, requiring evidence for collaboration and leadership as well as high-quality programs and community outreach. An NCI designation means patients have access to the latest treatments, personalized therapies and clinical trials. UCI Health physicians are specialists in their respective cancer fields who collaborate with researchers to develop new ways to detect, prevent and treat cancer for all populations.

"Our mission is to translate our research into treatments that can benefit patients, and we are driven by a strong commitment to scientific discovery and clinical innovation," says cancer center director Dr. Richard A. Van Etten. "Institutions lacking their own research base can follow and adopt advances developed at NCI centers like ours, but they cannot lead in the same way as comprehensive cancer centers that integrate research with clinical care."

Established in 1989, the center achieved its first NCI comprehensive cancer center designation in 1997. Soon after, it was renamed in honor of the Chao family as the Chao Family Comprehensive Cancer Center. Today it offers fully integrated research, prevention, diagnostic, treatment, rehabilitation and survivorship programs to treat the whole patient — not just the cancer.

UCI PROFESSOR WINS PRESTIGIOUS PRIZE FOR GROUNDBREAKING RESEARCH

Philip Felgner, PhD, a UCI School of Medicine professor of physiology and biophysics, is one of two scholars to win the prestigious 2022 Robert Koch Prize for fundamental research on the transfer of nucleic acids into cells. This pioneering technology for treating infectious diseases played a crucial role in developing the messenger RNA COVID-19 vaccines.

"This award is a great honor that I share with my team in appreciation of their dedication and commitment over the years," says Felgner, who directs the university's Vaccine Research and Development Center. "Messenger RNA technology holds great promise for creating preventive vaccines that will help avoid future pandemics and fight HIV and other infectious diseases. It also offers possibilities for treating cancer and Alzheimer's disease, and correcting genetic disorders such as sickle cell disease."

Felgner shares the prize with Dr. Drew Weissman, a professor at the University of Pennsylvania's Perelman School of Medicine. Felgner's research focused on the development of lipofection, a technology in which active ingredients are packaged in liposomes — tiny, fat-like particles the body can



Philip Felgner, PhD, received the 2022 Robert Koch Prize.

more easily absorb. On contact with the cell, the membranes of the liposome and the cell fuse and introduce the active ingredient into the cell. In medicine, the work has resulted in advanced technology for introducing active substances into cells, such as vaccines.

STUDY SHOWS HOW IMMUNITY DECLINES WITH AGE

New data by UCI researchers suggest why immune system function declines during aging, making older adults more susceptible to infectious diseases such as COVID-19. The pandemic has killed 1 million Americans, about 74% of them ages 65 and older.

The study, published in April in the prestigious journal *Nature Aging*, shows that the body's T cells, which fight invaders such as viruses and bacteria, become suppressed when they add branched carbohydrate chains called glycans, weakening their normal immune response.

Researchers found that as we grow older, the number of branched glycans increases in T cells due to an age-associated rise in an important sugar metabolite (N-acetylglucosamine) and signaling by the T cell cytokine interleukin-7. This occurs more in female T cells than in those of males. But the study also demonstrated a way to revive aging immune systems.

"Reversing the elevation in branched glycans rejuvenates human and mouse T cell function and reduces the severity of salmonella infection in old female mice," says the study's senior author, Michael Demetriou, MD, PhD, a UCI School of Medicine professor and chief of the Department of Neurology's Division of Multiple Sclerosis and Neuroimmunology.



"We've identified a potential fountain of youth for the immune system," adds Haik Mkhikian, MD, PhD, assistant professor and the study's first author. "This opens the door to the development of new therapeutic substances aimed at revitalizing aging T cells."

Back in Action

Rare spine surgery restores full mobility for an elite athlete.

WRITTEN BY LAUREL DIGANGI
PHOTOGRAPHED BY MICHAEL NEVEUX

Newport Beach resident Vince Bruno didn't expect to spend his 47th birthday lying on a backcountry trail, seriously injured and crying for help. But on the morning of June 4, 2021, while mountain biking in Crystal Cove State Park, he hit a stump, flew over the handlebars and crashed headfirst into a rock.

As a multisport athlete — he'd been a linebacker who signed as a free agent with the Miami Dolphins in 1997 and he won two world championships in Brazilian jujitsu — Bruno was no stranger to pain and injuries. But that afternoon's accident was far more frightening: He was paralyzed from the neck down.

"I couldn't move my arms or legs for several minutes," he says. "Then my legs began flopping around involuntarily."

The accident launched an agonizing, months-long period as Bruno tried to come to grips with his condition. Imaging tests showed he needed surgery for spinal stenosis, a condition he'd likely had for awhile that was made worse by his fall.

A number of doctors recommended surgery, but Bruno sought alternatives. Ultimately, his confidence in UCI Health surgeon Dr. Nitin Bhatia, one of a handful of U.S. spine specialists able to perform a complex procedure called spinal laminoplasty, won the day. The doctor not only explained things clearly, he also empathized with the athlete's conflicted feelings.



Vince Bruno is able to indulge in his love of mountain biking, surfing and hiking after recovering from spinal laminoplasty, a procedure performed by only a handful of U.S. spine surgeons.



PHOTO BY SHELLY BURLESON / UCI HEALTH

Bruno can still throw and catch a football because his spine surgery didn't involve fusing or removing bone.

"For patients, decisions like these are scary," says Bhatia, who serves as chair of the UCI School of Medicine's Department of Orthopaedic Surgery.

"It's important to explain carefully and in a manner that gives them time to process and reach a decision that is right for them and their families. We physicians — especially as society becomes more detached with digital devices, computers and video visits — have to remember that our primary goal is to take care of the patient, not just their spine."

CONFRONTING A FRIGHTENING INJURY

Within minutes after the accident, Bruno had somewhat regained control of his extremities and was soon discovered by two men who helped him walk the 2½ miles back to the trailhead.

From there, his wife Amy and a friend took him to the nearest emergency room, where he was told he needed immediate surgery because his spinal canal was pinching the nerves in his neck. But Bruno had a flag football game to coach that evening and his team of fourth graders was depending on him.

"I always told them not to give up, so I had to show up for them," he says. Remarkably, he coached the game wearing a neck brace, but only after signing a

"If a patient does need surgery, we work as a team to ensure the patient is getting the right surgery by the best surgeon."

waiver and promising the ER staff he'd return to get an MRI.

Bruno kept that promise, but when every doctor he saw recommended immediate spinal surgery, he resisted. "I believe my body is made a certain way, and I didn't want to open it up and change things," he said. "I was concerned that my range of motion would change with surgery."

Bruno's neighbor, UCI Health colorectal surgeon Dr. Joseph Carmichael, strongly encouraged him to see Bhatia. At their appointment, Bhatia explained that without surgery, any additional injury could result in permanent paralysis.

Bruno scheduled the surgery but also

consulted another specialist favored by many professional athletes. That surgeon had the same diagnosis, and told him that only a few surgeons could perform the type of surgery the athlete needed. He said the best specialist for a delicate spinal laminoplasty happened to be his wife's surgeon: Dr. Nitin Bhatia.

"That pushed me over the edge," says Bruno. "I understood that I needed this surgery, no matter what." In November 2021, he underwent the unique procedure to treat his spinal stenosis while preserving his mobility.

Spinal stenosis occurs when the spinal canal narrows and puts pressure on the column of nerve tissue that runs the length of the spine. "You can think of the spinal canal as a pipe," Bhatia says. "Normally it's about a ½- or ¾-inch wide, but Vince's was about half of that or less."

The condition can exist at birth. But it is more often age-related or develops in athletes like Bruno, whose bones grow thicker in response to weightlifting or other sports. The biking accident caused his already narrowed canal to pinch his nerves further, temporarily paralyzing him.

"The goal for someone like Vince was to take the pressure off the spinal cord," says Bhatia. "We didn't want any small accident to cause him to be paralyzed forever."

AN ALTERNATIVE TO SPINAL FUSION

The most common procedure for cervical spinal stenosis is spinal fusion surgery. Although outcomes are generally successful, Bhatia says Bruno's narrowed spinal canal affected four vertebrae levels — from C3 to C7 — not just two as in most cases.

"If Vince had traditional spinal fusion surgery," he says, "those levels would be locked together with metallic plates, and he would lose a lot of range of motion."

Spinal laminectomy is another option. For this procedure, the surgeon cuts away all the bone and fuses the cervical area with screws.

Spinal laminoplasty differs from both spinal fusion and laminectomy. Also called open-door laminoplasty, bone is not removed but instead cut and repositioned.

"Think of a typical door with hinges on one side," Bhatia says. "If you open that door halfway, there's an opening opposite the hinges. That's the extra space we create for the spinal cord. And although we do use some very small metal plates, almost like a kickstand to hold that door open, we do not fuse

from one level of bone to the next. We allow the structure to remain, and the body heals around it. It's a very elegant solution to a very bad problem."

Although rarely performed in the United States, the surgery is commonplace in Japan, says Bhatia, whose 2015 study in the journal *Clinical Neurology and Neurosurgery* showed excellent results achieved in initial U.S. laminoplasties. The UCI Health spine team now does more laminoplasties than most other U.S. spine centers, he says.

After surgery, Bruno stayed in the hospital for four days to ensure his pain level was properly managed. "My experience at the hospital was like being in a five-star hotel," he says.

Bruno credits the UCI Health spine team's skill for a successful surgery. As important, he says, is Bhatia's respect for his reluctance to undergo any procedure that might affect his mobility. "He never made me feel pressure to get the surgery but simply gave me the information I needed. I'm glad I went through the process and didn't rush my decision. That was the right call for me."

Bhatia credits the entire UCI Health

team with Bruno's recovery. "Our surgeons have great training to diagnose spinal problems and know who would actually benefit from surgery and who would not," he says.

"As an academic institution, we understand that a lot of people can get better without surgery. We also have great partners: our physical therapists, pain management doctors and physical medicine doctors. If a patient does need surgery, we work as a team to ensure the patient is getting the right surgery by the best surgeon."

A year after his mountain biking accident, Bruno continues to coach flag football, including his 11-year-old son Bronson's team, still modeling a can-do attitude for his players. He works out daily, often running, biking or surfing. While he admits to "being a little more cautious on the jujitsu side," he plans to participate in one more competition.

"I no longer have to worry about being paralyzed," he says. "And I feel the best I've felt in 15 or 20 years." ■

Learn more at ucihealth.org/spine



PHOTO BY SHELLY BURLESON / UCI HEALTH

The Seahawks, from left to right in the front row, are Hudson Grace, Bronson Bruno, Matin Mirrafati, Teddy Kemp, Owen Lewis, Kate Meier and Rowan Grace. In the back, from left to right are coaches Brody Jones, Vince Bruno and Joshua Meier.



Dr. Minh-Ha Tran, who oversees UCI Health transfusion services, visits the blood donor center in Irvine, where students and others are giving blood to address a critical need.

GIVING SO OTHERS MAY LIVE

A critical shortage of blood nationwide shines a light on the need for regular donations.

WRITTEN BY SHARI ROAN | PHOTOGRAPHED BY MICHAEL DER

Every day in hospitals across the country, health professionals provide their patients with lifesaving blood products. But it's not easy. A nationwide shortage of blood has put severe stress on the healthcare system. Dr. Minh-Ha Tran, medical director of UCI Health transfusion services and a UCI School of Medicine professor of pathology, discusses the vital need for regular blood donations.

Why are we seeing chronic U.S. blood shortages?

The last two national blood collection and utilization surveys show a steep decline in people participating in blood donation since 2015 to about 5% of eligible U.S. adults. It's really only among baby boomers that we see the rate of donation is fairly stable. Among younger age groups, the rate is dropping even more. Further research is needed to better understand what motivates blood donors, especially young adults. But since there is no substitute for blood, recruiting new donors across all age groups is of utmost importance.

Why did shortages grow even worse during the COVID-19 pandemic?

The pandemic caused a shift to distance learning and remote work environments, which dealt a significant blow to blood collection here and across the country. Mobile blood drives at high schools, colleges and businesses ground to a halt. Donors instead had to go to a blood collection center and many people were fearful that might expose them to COVID-19. Even when mobile blood drives resumed and donor centers reopened, social-distancing mandates limited the number of people who could give blood. By late 2021, supply disruptions caused by staffing shortages and increased delivery fleet costs also reduced the collection and distribution of blood. Today, everyone in the industry is working as hard as they can to rebuild our supplies and donor base.

As a Level I trauma center, does UCI Medical Center have a special need for blood products?

Yes. Typically, a medical patient needing a transfusion requires

about one or two units of blood, and up to four units a day for major surgical cases. But a trauma patient with catastrophic injuries may need 40 to 50 units of blood. It's common for us to order 20 to 30 units of red cells at a time, both to support ongoing transfusion needs and to partially replenish inventory levels in preparation for the next major trauma. But our vendors are only able to supply these units if they are receiving sufficient donations from first-time and repeat blood donors. We are blessed with amazing donors who come to our blood centers in Orange and Irvine. They have been tremendous, responding to the challenge and helping us rapidly build back our inventory levels.

What can people do to help alleviate chronic blood shortages?

The best way healthy people can help is to become regular blood or platelet donors. Donations of whole blood are permitted every 56 days. Many of our platelet donors give as often as every two weeks. People can also help by responding to appeals from blood centers when critical shortages arise. If a regional or local blood center posts an appeal for blood donations, please make that appointment and donate! Remember, the blood transfused into a patient today was collected, tested and processed days or weeks ago. But blood products have a limited shelf life (42 days for red blood cells and five days for platelets). It's a delicate balance. We must be careful not to build excess inventory that might result in excessive discard rates, wasting this life-giving resource.



What motivates donors to give blood?

People donate blood for many reasons. Some have had family members who have been hospitalized and needed a transfusion. Some donors at one point received a blood transfusion and want to give back. Others know that there is a great need. Some people may hear about a crisis and want to help. In truth, donating blood is an amazing gift. It's also a pretty quick process. It only takes about an hour to donate whole blood and about two or three hours for a platelet donation. Donors say they derive great satisfaction knowing they have contributed to saving another person's life. There is something very special about that. ■

For information on becoming a blood donor, visit ucihealth.org/donateblood

WHO CAN DONATE?

To ensure the safety of the blood supply, the U.S. Food and Drug Administration has strict rules on who may donate.

You must:

- Be at least 17 years of age to donate whole blood and at least 18 years of age to donate platelets
- Weigh at least 110 pounds
- Be free of cold and flu symptoms (allergies are OK, as are most medications)
- Not had a tattoo or piercing within the previous three months of donation
- Provide photo ID, list of medications
- Be prepared to fill out a medical history questionnaire

PREPARING FOR YOUR DONATION

Before you donate, you will want to:

- Eat healthy, iron-rich foods and don't skip meals
- Be sure to drink plenty of fluids (water/juices)
- Get plenty of rest the night before your donation
- Avoid taking aspirin for two days before donating platelets

ON DONATION DAY

Due to COVID-19, extra precautions will be taken for your safety as well as the safety of our staff.

- Eat a healthy meal before donating
- Drink an extra 16 ounces of water or fluids
- Wear a comfortable shirt with sleeves that are easy to roll up
- Bring your photo ID and list of medications
- Bring something to read or music to listen to help you relax
- Rest for 15 to 20 minutes after donating and enjoy fluids and a snack we provide
- Don't do any heavy lifting or vigorous exercise for the rest of the day

WHERE TO DONATE

UCI Health has blood donor centers at UCI Medical Center in the City of Orange and the UCI campus in Irvine. We also take our blood mobile into the community for blood drives. We are hosting summer blood drives at the Great Park in Irvine on July 19, Aug. 16 and Sept. 20. Make your appointment today!

To find a blood drive and make an appointment, visit ucihealth.org/find-blood-drive



Carolyn Tormey is hitting her stride after successful treatment for Cushing disease.

CURING CUSHING DISEASE WITHOUT SCARS

Pituitary tumors are removed through the nose by skilled UCI Health skull base surgeons.

WRITTEN BY NANCY BRANDS WARD | PHOTOGRAPHED BY KIMBERLY PHAM

All her life, Carolyn Tormey had energy and stamina to spare. Following a successful marketing career in orthopedic devices, she and her dentist husband, Pat, launched nonprofit groups to provide education and healthcare to children in Kenya and Uganda. She raised millions of dollars for her church and health organizations. She relished activities with her three children and four grandchildren.

A lifelong athlete, she ran track and studied ballet as a teenager. She later danced her way to two national ballroom championships. In her 40s, she took up dressage and dreamed of becoming an Olympic equestrian. In her 50s, she turned to boxing, teaching Zumba and competing in triathlons.

Three years ago, everything changed. The Yorba Linda resident's energy began to flag so much she would retreat to her car to rest mid-grocery shopping. She often found herself weeping for no reason. She gained 45 pounds despite eating healthy and working out at least two hours a day. Her face and midsection puffed up.

"To have all the energy in the world, then to have it just disappear ..." Tormey leaves the sentence unfinished as tears smother her voice. "My whole life was shutting down. I went from being this active, joyful person galloping through life to not even having energy to go out to dinner. I had to resign from all my boards and groups. It was horrendous."

In early 2019, her regular doctor suspected a rare endocrine condition called Cushing disease, which causes the body to overproduce cortisol. She referred Tormey to a community endocrinologist, who dismissed that diagnosis and put

her on a series of fasts and other diets. Nearly a year later and frustrated, she sought help at UCI Health, where an endocrinologist looked at her and at older photos and instantly confirmed what Tormey and her primary care doctor had suspected: She had Cushing disease.

This under-recognized condition affects at least 10 million people a year worldwide — women more often than men. The cause is often a tumor on the pituitary gland that tricks the body into manufacturing excess cortisol.

"Cortisol is a naturally existing hormone we need to handle stress," explains neurosurgeon Dr. Frank P.K. Hsu, co-director of UCI Health Skull Base Surgery Services and chair of neurological surgery at the UCI School of Medicine. "Too much puts your body in a constant high-stress state that takes a toll."

Excess cortisol causes the body to conserve calories, leading to rapid weight gain, muscle weakness and fatigue. Left untreated, Cushing disease can cause bone loss, type 2 diabetes, cardiovascular disease and even death. The initial diagnosis can be hard to make because patients may have varied symptoms.

Once doctors were able to confirm high levels of cortisol in the blood near Tormey's pituitary gland, she underwent a brain scan that detected a microscopic tumor on the gland itself. Less than a week later, she was on the operating table.

Working with Dr. Edward Kuan, director of endoscopic skull base surgery, Hsu found and removed the benign tumor from the pea-sized gland, which sits beneath the brain and just behind the nose. Nearby are the optic nerves and carotid arteries. It takes significant skill and experience to operate

in so delicate an area where there is little margin for error.

Kuan uses an endoscope to navigate through the nose to the pituitary. He and Hsu view their progress on two large monitors, one that displays the endoscopic image, the other acting like a GPS system inside the skull.

"He shows me the tumor; I dissect it," Hsu explains. "Our four 'hands' are in there all the time."

The multidisciplinary skull base team performs hundreds of minimally invasive and open surgeries each year. Hsu says they are supported by stellar intensive care specialists and other experts who can anticipate challenges and address them immediately.

Hsu told Tormey he removed a tumor that was attached in three spots. The next morning, her cortisol level had dropped from a jaw-dropping 85 to 1, a sign of the surgery's success. (The normal range is 10 to 23.) Three weeks later, she had lost most of the excess weight even though she couldn't yet resume her exercise regimen. Once her pituitary gland resumed working properly, her cortisol level stabilized at 12.

A complete return to normal has been hampered by other health problems, but she's on her way. Tormey hopes to run a triathlon by her 63rd birthday in June 2023.

"When someone asks, 'How are you?' I tell them, 'I'm grateful to be alive,'" she says. "I know beyond a shadow of a doubt that I wouldn't be here if not for the prayers of family and friends — and the doctors at UCI Health." ■

Learn more at ucihealth.org/skullbasesurgery

TAKING SHAPE

A little more than six months after groundbreaking, UCI Health — Irvine, our new \$1.3 billion medical complex in Irvine, is swiftly becoming a reality. These photos — taken in January and April — show the pace of construction on the Center for Advanced Care and its adjacent parking structure along Jamboree Road near the University of California, Irvine campus.

When finished in mid-2023, it will offer urgent care, comprehensive laboratory and radiology services, as well as serve as a one-stop shop for primary and specialty care for adults and children.

Learn more about the project at care.ucihealth.org/irvinehospital



January 2022



April 2022

Visible in the background are the initial outlines of the new Chao Family Comprehensive Cancer Center and Ambulatory Care Center, slated to open in late 2023, and a state-of-the-art, acute care hospital and emergency department, which will open in late 2025. When completed in late 2025, the medical complex will bring the most advanced health services to coastal and southern Orange County.

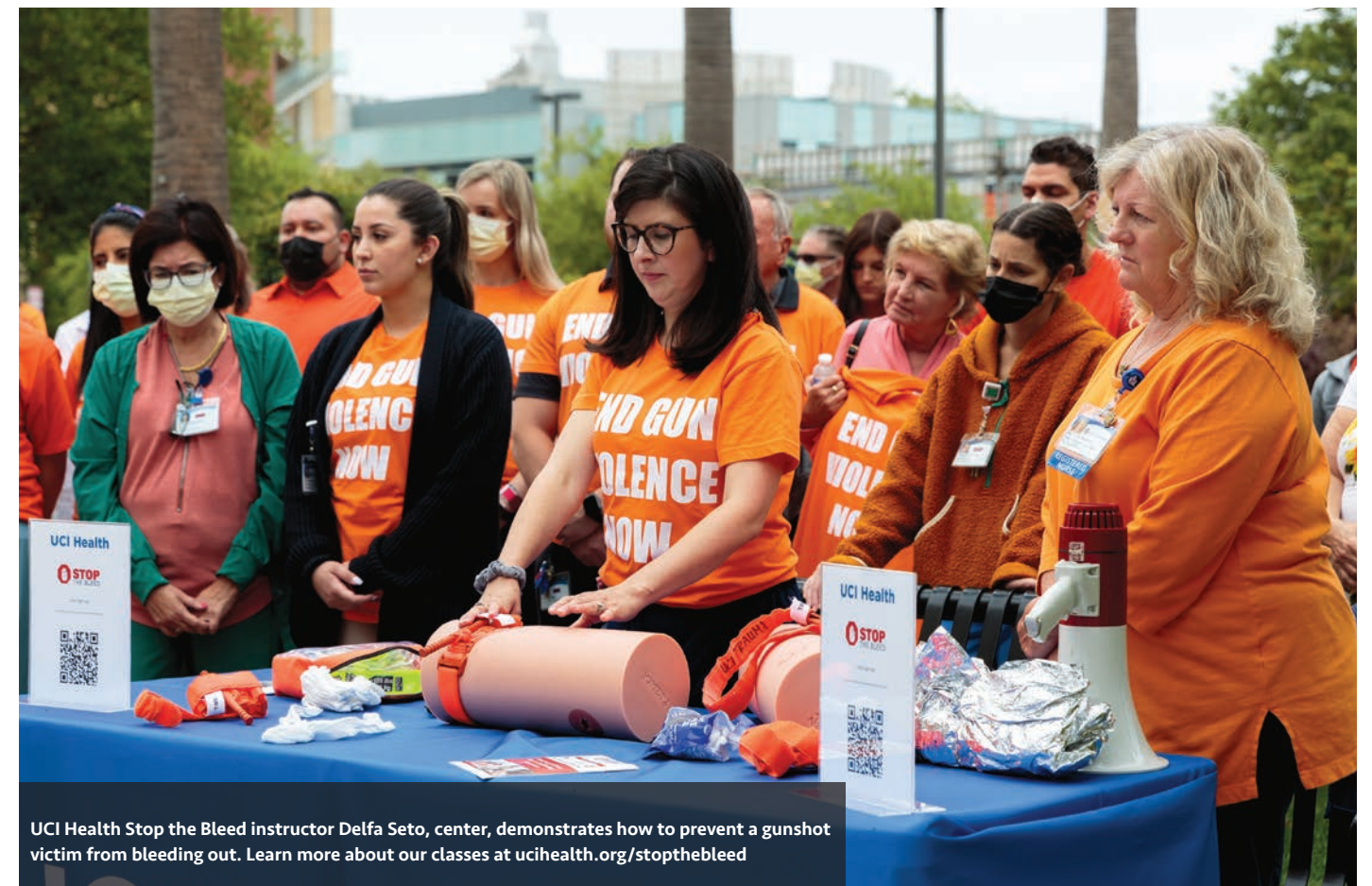
"It's exciting to watch the next chapter of healthcare in Orange County taking shape," says UCI Health CEO Chad Lefteris.

NATIONAL GUN VIOLENCE AWARENESS DAY

In recognition of National Gun Violence Awareness Day on June 3, the UCI Health trauma team gathered outside UCI Douglas Hospital, Orange County's busiest trauma center, to show their continuing commitment to prevent and decrease gun violence in our community and the nation. Wearing orange shirts saying "End Gun Violence Now," they know all too well the grim toll caused by the mass shootings in Laguna Woods, Buffalo, N.Y., Uvalde, Texas and Tulsa, Okla.



Surgical fellow Dr. Claire Sakae, center, speaks about the need to protect children like hers from gun violence as trauma surgeon Dr. Theresa Chin, at right, looks on.



UCI Health Stop the Bleed instructor Delfa Seto, center, demonstrates how to prevent a gunshot victim from bleeding out. Learn more about our classes at ucihealth.org/stopthebleed

HEALTH CLASSES

Improve your well-being and prevent disease with our health classes. Most are free, but some do have fees. Most classes are being held online via Zoom until further notice.

Registration is required. All classes are one session unless otherwise noted.

For more information, visit ucihealth.org/events or call 657-282-6357.

ACUPRESSURE FOR LABOR PAIN
July 13, Aug. 10, Sept. 7, Oct. 12 | 7-8 p.m.

ADVANCE DIRECTIVES
Sept. 22 | Noon-1:30 p.m.

BREASTFEEDING
July 7, Aug. 4, Sept. 1, Oct. 6 | 6-9 p.m.

HEALTHY LIVING
July 5, 19, Aug. 2, 16, 30, Sept. 13, 27, Oct. 11 | 3-4 p.m.

LIVING WELL WITH HEART FAILURE
Sept. 12 | 4-5:15 p.m.

MEDITATION FOR HEALTH (four classes)
Sept. 12, 19, 26, Oct. 3 | 6:30-7:30 p.m.

MEDITATION: BODY SCAN RELAXATION
Dec. 5 | 6:30-7:30 p.m.

MEDITATION: BREATHING
Oct. 17 | 6:30-7:30 p.m.

NEWBORN CARE
July 14, Aug. 11, Sept. 8, Oct. 13 | 6-8 p.m.

PARKINSON'S WELLNESS PROGRAM
Wednesdays | 6-9 p.m.

PREPARED CHILDBIRTH (five classes)
Tuesdays | 6-9 p.m.
July 12, 19, 26, Aug. 2, 9
Aug. 16, 23, 30, Sept. 6, 13
Sept. 20, 27, Oct. 4, 11, 18
Nov. 8, 15, 22, 29, Dec. 6
Wednesdays | 6-9 p.m.
June 29, July 6, 13, 20



July 27, Aug. 3, 17, 24, 31
Sept. 7, 14, 21, 28, Oct. 5
Oct. 12, 19, 26, Nov. 9, 16

PREPARING FOR SURGERY — MIND, BODY AND SPIRIT
First Monday of each month | Noon-1:30 p.m.

STROKE PREVENTION
English: July 27, Sept. 28 | 4-5 p.m.
Spanish: July 26, Sept. 27 | 4-5 p.m.
To register, call 866-STROKE-3 (866-787-6533).

TAI CHI FOR WELLNESS (six classes)
June 24, July 1, 8, 15, 22, 29 | 11-11:30 a.m.
Aug. 5, 12, 19, 26, Sept. 2, 9 | 11-11:30 a.m.
Sept. 16, 23, 30, Oct. 7, 14 | 11-11:30 a.m.

STOP THE BLEED CLASSES

Learn how to control bleeding in an emergency until first responders arrive.

July 15 | noon-1 p.m.
July 21 | 6-7 p.m.
Aug. 10 | noon-1 p.m.
Aug. 18 | 6-7 p.m.
Register at ucihealth.org/stopthebleed

EVENTS

UCI Health and UCI are proud to sponsor community events that provide information about health issues. Due to COVID-19, many of our lectures and events are still being held virtually.

UCI ANTI-CANCER CHALLENGE

Learn what's new in cancer care and prevention at our UCI Anti-Cancer Challenge webinars. Get links to the 1 p.m. presentations at anti-cancerchallenge.org

July 28 | Cancer & Genetics,
Dr. Richard Van Etten, director of the UCI Health Chao Family Comprehensive Cancer Center

Aug. 25 | Reducing Cancer Risk With Nutrition, Sandy Colvard, ND

Sept. 22 | Neuroplasticity, Daniela Bota, MD, PhD

Oct. 8 | The UCI Anti-Cancer Challenge returns with an in-person festival at UCI's Aldrich Park.

Every dollar raised supports critical cancer research at the UCI Chao Family Comprehensive Cancer Center. Register to run, ride or walk at anti-cancerchallenge.org and learn more about Challenge Day activities.

SUE & BILL GROSS STEM CENTER COMMUNITY SEMINARS

Sept. 13 | Blood-Forming Stem Cells: Risks and Rewards, Matthew Inlay, PhD; Angela Fleischman, MD, PhD

Oct. 11 | Precision Medicine and Neurodegenerative Disease: Where Do Stem Cells Fit In? Leslie Thompson, PhD; Anna Morenkova, MD, PhD

These free lectures will be held in person and virtually at 7 p.m. To register, visit

stemcell.uci.edu, email stemcell@uci.edu or call 949-824-3990.

GAVIN HERBERT EYE INSTITUTE COMMUNITY LECTURE SERIES

Learn the causes, symptoms and treatments for eye-related conditions.

Sept. 13 | Dry Eye, Olivia Lee, MD; **Sleep and Eye Health,** Kevin Im, MD; **Sleep Apnea and Anterior Ischemic Optic Neuropathy,** Lilangi Ediriwickrema, MD

Oct. 11 | Diabetic eye disease: What it is and how it's treated, Mitul C. Mehta, MD

Visit eye.uci.edu/lectureRSVP.html to register for these online presentations, which begin at 7 p.m. For more information, please email ghei@uci.edu or call 949-824-7243.

SUPPORT GROUPS

ADVANCED HEART FAILURE & VAD SUPPORT GROUP
714-456-7514

BARIATRIC SUPPORT GROUP
714-456-6185

BLADDER CANCER SUPPORT GROUP
714-456-2846

BRAIN INJURY SUPPORT GROUP
714-509-2524

BRAIN TUMOR SUPPORT GROUP
714-456-5812

BURN SURVIVORS SUPPORT GROUP
714-456-7437

CHRONIC LYMPHOCYTIC LEUKEMIA
tevens@cclsociety.org

DIABETES SUPPORT GROUP
diabetessupportgroup@uci.edu

HEAD AND NECK CANCER SUPPORT GROUP
714-509-6311

INFLAMMATORY BOWEL DISEASE SUPPORT GROUP
714-456-7057

KOREAN WOMEN'S CANCER SUPPORT GROUP
714-456-8319

LOW VISION SUPPORT GROUP
949-824-9771

MULTIPLE MYELOMA SUPPORT GROUP
800-452-2873, ext. 233

NORMAL PRESSURE HYDROCEPHALUS (NPH)
714-456-6966

OSTOMY ASSOCIATION OF ORANGE COUNTY
714-637-7971

PANCREATIC CANCER SUPPORT GROUP
714-456-7057

PARKINSON'S DISEASE SUPPORT GROUP
blagasse@hs.uci.edu

STROKE SUPPORT GROUP
866-STROKE-3 (866-787-6533)

TRIGEMINAL NEURALGIA ASSOCIATION
714-944-3044

YOUNG ADULT CANCER SUPPORT GROUP
714-509-6311

To learn more about our support groups, call the numbers listed or visit ucihealth.org/events





PHOTO BY KIMBERLY PHAM

Domenica LoCascio worked with UCI Health brain tumor specialists to preserve her mother's quality of life until the end.

WHEN THE BEST CARE MEANS EASING END-OF-LIFE SUFFERING

In March 2021, Josephine LoCascio began experiencing memory loss and weakness in her legs. She had been in great health and enjoyed going to church, gardening, walking and socializing with her Laguna Niguel neighbors, friends and family. An imaging scan revealed a glioblastoma in the 86-year-old woman's brain. Her community hospital physicians recommended radiation therapy. Her daughter, Domenica LoCascio, felt they first needed to understand all her options and discuss her case with brain tumor experts in order to make an informed decision. They were referred to the UCI Health Comprehensive Brain Tumor Program and met with neuro-oncologist Dr. Xiao-Tang Kong. That visit was pivotal in helping the family navigate the remaining months of her mother's life.

“When my mother and I met with Dr. Kong, she very quickly realized how vibrant my mother was and that she had lived a very healthy, full and blessed life. Dr. Kong described in great detail the various treatments that could extend her life. She also explained that the side effects of aggressive chemo and radiation therapy, given her age, may affect the quality of life my mom wanted to maintain.

After careful discussion, we decided not to pursue aggressive treatment. Dr. Kong respected our decision and over the next nine months, she and her team managed my mother's illness with steroids and palliative care to ease her pain. She enjoyed time with her four grandsons and my brother, who was able to be with her for the last few months. We attended Mass together, watched TV together. We celebrated holidays with family including Easter, Mother's Day, Thanksgiving and Christmas, as well as her birthday. She slept in her own bed until the end.

We were also lucky to live near the new UCI Health cancer facility in Laguna Hills. The nurses there were so responsive and supportive. This was so important to me because I didn't want my mother to suffer or be scared through this last journey of her life. They were genuinely concerned about her daily quality of life. Dr. Kong was very supportive of our decision to not do radiation or chemotherapy and wanted to be a part of the process.

I had never heard of palliative care before. I am thankful to the nurse who helped us through the shock of diagnosis and the realization that I could not change the outcome. Dr. Kong and her team focused on providing relief from symptoms and giving my mother a dignified, peaceful end to her beautiful life. We had the peace of mind of knowing we made the right decision for her.

We are so grateful for the support and care she received. As a UCI alum, I already had a connection and wanted to show my appreciation. I made a donation to the brain tumor program, which was matched 100% by my employer, and I asked others who knew and loved my mother to honor her life by donating to UCI Health and Dr. Kong's research.”

— Domenica LoCascio

Learn more about brain tumor care at ucihealth.org/braintumor



UCI Health

From the moment I met my surgeon, I felt like the most important patient.

UCI Health provides leading-edge treatments and the reassurance that our patients are in good hands. That is why other hospitals in Orange County trust our surgeons to take on some of their most complex cases.



Learn more about our expertise in complex surgery. Visit ucihealth.org/surgery or call 714-464-6409.

UCI Health

333 CITY BLVD. WEST, SUITE 1250
ORANGE, CA 92868-2990

NONPROFIT ORG.
U.S. POSTAGE
PAID
SANTA ANA, CA
PERMIT NO. 1106



CONNECT WITH US

ucihealth.org



©2022, THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

UCI Anti-Cancer Challenge

THE END OF CANCER BEGINS HERE.

When you ride, run or walk for the **2022 UCI Anti-Cancer Challenge on Oct. 8**, you join a community dedicated to advancing innovative cancer research at the UCI Health Chao Family Comprehensive Cancer Center. Every dollar raised supports promising pilot studies and early-phase clinical trials to help prevent, treat and cure cancer — to save lives.

REGISTER TODAY AT ANTI-CANCERCHALLENGE.ORG



BRILLIANT FUTURE
THE CAMPAIGN FOR UCI