The answer is not always as simple as we eat too much and exercise too little. Science is now starting to offer deeper insights into this weighty question.
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Humans and the microbes we host have co-evolved over millennia, and we are only now beginning to understand the significant role this relationship plays in the balance between health and disease. Think of us as a microbial consortium, a “superorganism” inhabited by an estimated 100-trillion microbes, mainly bacteria that outnumber the cells of our own making by a factor of 10. Collectively, these are called the microbiota.

At UCLA, we are in the early stages of launching a concerted effort to understand the effects of our microbiota, and we are working toward creating the UCLA Microbiome Center to explore the full gamut — from basic science to clinical applications — of microbiomes, so that, ultimately, we can use this knowledge to help treat chronic conditions, infections and even cancer.

An example of this would be the role of microbiota in the mysterious link between diet and obesity. At this time, more than one-third of adults in the U.S. are obese, and the physical and financial toll is enormous. Obesity brings with it increased risk of heart disease, stroke and certain kinds of cancer, and according to some studies, the condition and its associated complications carry a price tag that exceeds $190 billion a year. There is mounting evidence that an unhealthy diet, and other factors, including host genetics and lifestyle, can result in an imbalance in the microbiota that leads to increased intestinal permeability, low-grade inflammation and a poorly understood cascade that ultimately leads to weight gain and associated conditions.

But obesity is only one area being explored in the field of microbiomes. Faculty in the David Geffen School of Medicine at UCLA (DGSOM) have found evidence that bacteria ingested in food can affect brain function; they also have observed that women who regularly consume beneficial bacteria known as probiotics through yogurt showed altered brain function. Other DGSOM investigators have discovered that specific types of bacteria that live in the gut are major contributors to lymphoma, a cancer of the white blood cells, and that small molecules produced by bacteria in the intestinal tract can affect our immune systems, the liver and the brain. Clinically, we are offering fecal transplantation from healthy donors to treat infections that are caused by overuse of antibiotics, particularly C. difficile infections.

This brave new world of microbiota may lead to applications that someday will provide better ways to manage infections during transplantation; the development of antibiotics that kill pathogens but don’t harm beneficial microbes; evidence-based deployment of probiotics and prebiotics for managing obesity, metabolic disorders, allergies, autoimmunity and other disorders; and microbiome-based diagnostics and therapeutics.

What needs to happen now, and what we are undertaking at UCLA, is rigorous science that moves from animal models to human studies and moves the field from correlation to causality. We in the David Geffen School of Medicine at UCLA and UCLA Health System are shaping this future.

A. Eugene Washington, MD, MSc
Vice Chancellor, UCLA Health Sciences
Dean, David Geffen School of Medicine at UCLA
Gerald S. Levey, MD, Endowed Chair
I wish to convey my congratulations on the publication of “To Heal the Human Instrument” (Fall 2014, page 18). This article, explaining the work of Dr. Gerald Berke and colleagues through UCLA’s Voice Center for Medicine and the Arts, reminds me of a bedtime story — “The Little Engine that Could” — as I reflect upon the significant advances in the understanding and treatment of a rare and devastating voice disorder. The bulk of such advances results from the singular pioneering work accomplished by Dr. Berke and colleagues. Without hyperbole, Dr. Berke and his colleagues are providing what amounts to daily miracles. From all of us who have experienced the devastation of losing the ability to speak, I sincerely express my gratitude to Dr. Berke, UCLA and U Magazine for your outstanding service in this effort.

Spasmodic dysphonia (SD) affects hundreds of thousands of people worldwide. Thirty years ago, when I was diagnosed with SD, I was fortunate to benefit from the courageous invention of another California surgeon, Dr. Herbert H. Dedo of UC San Francisco. In the intervening decades, refinement and dissemination of surgery as an effective treatment for SD was eclipsed by the advent of chemical therapy in the form of Botox injections. Dr. Berke is kicking it up a significant notch through persistence, courage and surgical skill. Dr. Berke’s consistent dedication to helping not only his patients, but also SD patients all around the globe, is remarkable. Recently appointed chair of the National Spasmodic Dysphonia Association’s Medical Advisory Board, Dr. Berke will without doubt be in a position to do even more in the coming years to advance the availability of effective diagnosis and treatment of SD.

Your article delivers accuracy and awareness to public understanding of effective treatment for SD. Medicine at its best is science in the service of human lives, and these stories illustrate that priority very effectively.

Mary Brady
Member, National Spasmodic Dysphonia Association
Baltimore, Maryland

As the facilitator of the Comforting Hearts Family Bereavement Group, I want to thank U Magazine for the beautiful coverage of this important program. All of the parents in this support group were given the magazine with the article “At the End of Too-few Days” (Fall 2014, page 32), and they were very touched and impressed by the article. As you can gather, it is hard enough getting through each day as a bereaved parent, so many have asked me to share with the magazine their very positive responses and gratitude for the article. The pictures were particularly beautiful and touching and portrayed in a very artistic and sensitive fashion. Our parents would like people to know that the Children’s Pain and Comfort Care program is vital to their survival and that Jeannie Malabanan’s story is one that conveys the needs that all families caring for a dying child may have. Thank you for sharing their stories and the vitality of this UCLA program with this story and photos. The group is grateful to UCLA in all ways!

Gina Kornfeind, MSW, MS
Mattel Children’s Hospital UCLA

Thank you for the article “At the End of Too-few Days,” highlighting the outstanding Children’s Pain and Comfort Care program at Mattel Children’s Hospital UCLA. We are very fortunate to have this program here and a multidisciplinary team of experts in this area who “get it” and know how to help patients, families and staff alike during the most difficult of times. Kudos to everyone on the CPCC team, and thank you to the parents who shared their experiences with the team and the Comforting Heart Family Bereavement Group for this article — their openness and desire to give back are deeply appreciated.

Nancy Hayes
Manager, Care Coordination and Clinical Social Work
Mattel Children’s Hospital UCLA

What can the past teach us about Ebola?
Lest we forget:
Hardly a man is now alive
Except for those over 95
But in the influenza epidemic of 1918
548,000 Americans died
And over 20-million worldwide.

Something the Centers for Disease Control and Prevention and the White House should think about. My maternal grandfather was one of the 548,000, and my mother, born in 1916, never got to know her father. Funny how things like that, or my sister Sheila dying of her smallpox vaccination in 1942, can come back to haunt you.

Richard Rofman
Van Nuys, California

Share Your Thoughts with Us
Like us or not, we want to hear from you. Your input is important, so please give us your comments and feedback. Include your name, e-mail address, city and state of residence and, if you are a UCLA medical alum (MD, PhD, Resident and/or Fellow), your degree(s) and graduation year(s). Letters and/or comments may be edited for clarity and/or length. Don’t be a stranger. Write to us, or post your comments on our social-media pages.

Submit letters to:
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uclahealth.org/getsocial
Discover the fountain of U

Voted Best in the West / Over 150 neighborhood offices

Making your health a priority is easier than ever. With over 150 primary and specialty care locations, UCLA doctors are where you need us, when you need us.

Consistently ranked Best in the West by *U.S. News & World Report*, UCLA offers world-changing medical care right here at home, tailored to fit you and your active life. Because whatever the specialty, we specialize in keeping you doing what you love.
When Myra and David Mezquita had triplets, they knew they were blessed, even though they had their hands more than full caring for the new arrivals as well as their teenagers. Then one of the triplets, Vicky, was diagnosed with liver cancer and needed a transplant. Things seemed to be going well after the operation in April 2013. But less than a year later, Vicky was diagnosed with recurrent cancer in her new liver.

To eradicate some liver tumors that remained unaffected by the chemotherapy, the 4-year-old underwent chemotherapy and stereotactic body radiation therapy (SBRT), a newer radiation treatment that noninvasively focuses high doses of radiation to kill tumors in a few treatment sessions. The Mezquitas were juggling treatment appointments and caring for their other children when they lost crucial supplemental funding they had used to pay for nursing care for Vicky. Their troubles were compounded when a utility-sparked fire destroyed their backyard, leaving the children no safe place to play.

Then a group of Westside teens who raise money through a charity they cofounded to help sick children, Teamwork Makes the Dream Work, learned of the family’s plight. Guided by the organization’s motto, “Aiming to do good wherever good can be done,” they held their annual garage sale and raised more than $5,100 for Vicky’s family, money to help them augment her nursing care and create a new backyard for Vicky and her siblings to enjoy.
“We went all over the Westside, from Santa Monica to West Hollywood, gathering donations for the garage sale,” group member Nahal Shakib, 19, says. “It was really important to us to raise a lot of money.” After the event, Shakib and members Jasmine Shaouli, 18, Leila Aframian, 17, and Devon Shalom, 17, presented a check to David Mezquita, who was visiting his daughter at Mattel Children’s Hospital UCLA. The teens brought gifts for Vicky’s siblings as well. “It takes a lot of help to make good things happen,” David Mezquita says. “I’m very happy and pleased that everyone joined together as a team to make this happen. I’m very touched.”

Myra Mezquita says that, at times, the circumstances with which her family is dealing are “beyond imaginable. I can’t express the magnitude of our gratitude for the support we received from everyone.”

Percy Lee, MD, director of UCLA’s SBRT program, says he was pleased Vicky’s medical team was able to treat all the visible cancer with the new radiation therapy. “This little girl has been through a lot in the last four years, and we are hopeful that the treatments give her a fighting chance,” he says. Adds Julie Kang, MD, PhD, a resident in the Department of Radiation Oncology who helped connect the teens with the Mezquita family, “Parents can sometimes feel so alone in this big battle. It’s beyond amazing that these angels came out of nowhere to help them out.”
To reduce the risk of bone fractures and their associated complications, the United States Preventive Services Task force (USPSTF) recommends that all women age 65 and older be tested and treated for low bone-mineral density. The task force also recommends that post-menopausal women ages 50 to 64 get bone-mineral-density screenings if their 10-year probability of suffering a hip, vertebral, humerus or wrist fracture is 9.3 percent or greater, based on the Fracture Risk Assessment Tool.

A new UCLA-led study, however, finds that the USPSTF strategy predicted only slightly more than one-fourth of the women who went on to experience major osteoporotic fractures within 10 years. The study also found that two older osteoporosis risk-assessment tools were not much better. The Osteoporosis Self-Assessment Tool (OST) is based on a person’s weight and age, and the Simple Calculated Osteoporosis Risk Estimation Tool (SCORE) uses race, rheumatoid arthritis, history of non-traumatic fracture, age, prior estrogen therapy and weight.

“If we want to prevent fractures, we need tools that help us accurately predict who will suffer these osteoporotic injuries, so that we can target these at-risk people for preventive measures,” says Carolyn Crandall, MD ’91 (RES ’94), professor of medicine. “Our results suggest that our current guidelines for screening in younger post-menopausal women do not accurately identify who will suffer a fracture.”

The researchers used data from the Women’s Health Initiative, which collected details about fractures during 10 years’ time and information about osteoporosis risk factors from 62,492 post-menopausal women in the United States from ages 50 to 64. Of the women studied, 85 percent were white, 9 percent were black and 4 percent were Hispanic. The average age was 57.9 years. The study found that overall, the USPSTF strategy captured only 25.8 percent of the women who suffered fractures within 10 years, SCORE captured 38.6 percent and OST caught 39.8 percent.

The authors note some weaknesses in the study. For instance, the participants of the Women’s Health Initiative may be healthier than similarly aged women whom doctors see in their clinical practices, so the findings may not generalize to others. Still, these findings suggest that the current USPSTF screening strategy does not identify the vast majority of younger post-menopausal women who experienced bone fractures, and the other strategies have significant weaknesses as well.

“Neither the USPSTF nor the other two screening strategies performed better than chance alone in discriminating among women who did and did not have subsequent fractures,” the researchers write. “These findings highlight the pressing need for the further prospective evaluation of alternative strategies, with the goal of better targeting resources to at-risk young post-menopausal women. Our findings do not support use of the USPSTF strategy or the other tools we tested to identify younger post-menopausal women who are at higher risk of fracture.”

Brain Reboot

One of the mysteries of anesthesia is how patients can be rendered unresponsive during surgery and then wake up with all their memories and skills intact. A UCLA study provides new clues that illuminate how our brains transit from unconsciousness back to consciousness.

Previous research has shown that the anesthetized brain is not “silent” under surgical levels of anesthesia but experiences certain patterns of activity, and it spontaneously changes its activity patterns over time, says Andrew E. Hudson, MD, PhD, assistant professor of anesthesiology. Using an anesthetized rodent model, Dr. Hudson and his research team recorded the brain’s electrical activity by placing electrodes in several areas associated with arousal and consciousness. They then slowly decreased the amount of anesthesia, as is done with patients in the operating room, monitoring how the electrical activity in the brain changed and looking for common activity patterns across all the study subjects.

The researchers found that the brain activity occurred in discrete clumps, or clusters, and that the brain did not jump among all of the clusters uniformly. A small number of activity patterns consistently occurred in the anesthetized rodents, depending on how much anesthesia the subject was receiving, jumping spontaneously from one pattern to another. A few activity patterns served as “hubs” on the way back to consciousness, connecting activity patterns consistent with deeper anesthesia to those observed under lighter anesthesia.

“Recovery from anesthesia is not simply the result of the anesthetic wearing off, but also of the brain finding its way back through a maze of possible activity states to those that allow conscious experience,” Dr. Hudson says. “Put simply, the brain reboots itself.”

The study suggests a new way to think about the human brain under anesthesia and could encourage physicians to re-examine how they approach monitoring anesthesia in the operating room. Additionally, if the results are applicable to other disorders of consciousness — such as coma or minimally conscious states — doctors may be better able to predict functional recovery from brain injuries by looking at the spontaneously occurring jumps in brain activity.

The UCLA researchers will next test using different anesthetic agents to determine if they produce similar characteristic brain activity patterns with “hub” states. They also hope to better characterize how the brain jumps between patterns.

“Recovery of consciousness is mediated by a network of discrete metastable activity states,” Proceedings of the National Academy of Sciences, June 24, 2014

The patterns of spontaneous activity in the brain, recorded with multiple electrodes, change as the concentration of the anesthetic isoflurane is decreased (bottom panel), until the animal recovers consciousness (indicated by “ROC”). Each panel shows the power in a different brain region as a function of frequency over time. Red indicates high power and blue indicates low power. The patterns of brain activity change abruptly over time, and some patterns are present at several concentrations of anesthetic.

Image: Courtesy of Dr. Andrew E. Hudson
Heart’s Repair Process Points to New Treatment Strategy for Heart Attack

UCLA researchers have discovered that fibroblasts — scar-forming cells in the heart — have the ability to become endothelial cells, the cells that form blood vessels. Because increasing the number of blood vessels in the heart boosts its ability to heal after injury, the finding could point the way toward a new strategy for treating people who have suffered a heart attack.

Reversing or preventing scar tissue from forming has been one of the major challenges of cardiovascular medicine, says Arjun Deb, MD, associate professor of medicine in the Division of Cardiology and a member of the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research at UCLA. “It is well-known that increasing the number of blood vessels in the injured heart following a heart attack improves its ability to heal. And we know that scar tissue in the heart is associated with a poorer prognosis. Our findings suggest the possibility of coaxing scar-forming cells in the heart to change their identity into blood-vessel-forming cells, which could potentially be a useful approach for better heart repair.”

Several years ago, Dr. Deb and his colleagues were investigating the relationship between fibroblasts and endothelial cells, which exist in close proximity in the injured heart. Through experiments in mice in which scar-forming cells in the heart’s injured region were genetically labeled, the researchers discovered that many of the fibroblasts in the heart’s injured region changed into endothelial cells and contributed directly to blood-vessel formation — a phenomenon they called mesenchymal-endothelial transition, or MEndoT. The researchers identified a molecular mechanism that regulated MEndoT and found that administering a small molecule to augment MEndoT led to less scarring and allowed the heart to heal more completely. They plan to test similar small molecules in other models to determine whether or not the strategy could potentially be used to benefit humans.

“There are remarkable similarities in the process of scarring in different organs after injury,” Dr. Deb says. “Our hope is that this approach can be used to treat scar tissue in other organs as well.”

By adding amino acids to the molecule of tobramycin, researchers created a new antibiotic drug molecule, pentobra, which can punch holes in persister cell membranes to get inside to kill the bacteria.

Overcoming Resistance

The pace at which bacteria are developing resistance to antibiotics presents an urgent global-health concern. But now, an interdisciplinary team of scientists from UCLA’s California NanoSystems Institute has developed a method to re-engineer antibiotics to enhance their activity against key cells that are responsible for making bacteria resistant to new drugs.

The cells, known as persisters, slow down their metabolism and shut down their mechanisms for taking in molecules, preventing normal antibiotics from penetrating them to kill the bug. To overcome this resistance, the
Neural Stem Cell Overgrowth and the Autistic Brain

No one knows why, but people with autism-spectrum disorder often experience a period of accelerated brain growth after birth. A new study by UCLA researchers now demonstrates how, in pregnant mice, inflammation — a first line defense of the immune system — can trigger an excessive division of neural stem cells that can cause “overgrowth” in the offspring’s brain.

“We have shown that one way maternal inflammation could result in larger brains and, ultimately, autistic behavior, is through the activation of the neural stem cells that reside in the brain of all developing and adult mammals,” says Harley Kornblum, MD (RES ’91, FEL ’94), PhD, founding director of the Neural Stem Cell Research Center at the Jane and Terry Semel Institute for Neuroscience and Human Behavior at UCLA.

In the study, the researchers injected a pregnant mouse with a low dose of lipopolysaccharide, a toxin found in *E. coli* bacteria, to mimic environmental factors such as an infection or autoimmune disorder that could activate the immune system. The researchers discovered the toxin caused an excessive production of neural stem cells and enlarged the offspring’s brains. Notably, the researchers found that mice with enlarged brains also displayed behaviors like those associated with autism in humans. For example, the mice were less likely to vocalize when they were separated from their mother as pups, were less likely to show interest in interacting with other mice, showed increased levels of anxiety and were more likely to engage in repetitive behaviors like excessive grooming.

“Although it’s known that maternal inflammation is a risk factor for some neurodevelopmental disorders such as autism, it’s not thought to directly cause them,” Dr. Kornblum says. He noted that autism is clearly a highly heritable disorder, but other, non-genetic factors clearly play a role.

The researchers also found evidence that the brain growth triggered by the immune reaction was even greater in mice that lacked one copy of a tumor-suppressor gene called phosphatase and tensin homolog, or PTEN. The PTEN protein normally helps prevent cells from growing and dividing too rapidly. In humans, having an abnormal version of the PTEN gene leads to very large head size, or macrocephaly, a condition that also is associated with a high risk for autism. In addition, the team found that the proliferation of neural-stem-cell and brain overgrowth was stimulated by the activation of a specific molecular pathway involving the enzyme NADPH oxidase, which the UCLA researchers have previously found to be associated with neural-stem-cell growth.

The team, led by Gerard C.L. Wong, PhD, professor in the UCLA Department of Chemistry and Biochemistry and the Department of Bioengineering, and Andrea M. Kasko, PhD, associate professor of bioengineering, developed a method analogous to taking an ordinary car and adding high-performance parts to make a fast-and-furious street racer.

“We’re in an unsustainable race with bacteria,” Dr. Wong says. "It takes upward of $100 million to develop one antibiotic drug, and bacteria develop resistance to it within two years. This reality brought us to the idea of taking an existing antibiotic wand and renovating it to give it a new and complementary antimicrobial ability, while preserving its original ability, to make a better drug overall.”

The team began with the antibiotic tobramycin, to which many persisters are resistant. By adding amino acids to the molecule of tobramycin, they created a new antibiotic drug molecule, pentobra, which is able to punch holes in the membranes of persister cells to get inside to kill the bacteria. "Pentobra can punch enough holes in the cell membrane to kill the cell, but that may not be the most efficient way to kill a bug," Dr. Wong says. "This antibiotic also messes up the bacteria’s ability to grow by preventing them from making more bacterial proteins.”

The synergistic one-two punch is “what makes this antibiotic so powerful and why pentobra can kill persister-cell strains 10,000-to-1-million times better than tobramycin,” Dr. Wong says.

This revolutionary process can be used to renovate other existing antibiotics to resurrect their activity against resistant bacteria and to enhance their potency. The new approach also can potentially be used to improve many new antibiotics being developed. “If someone has a drug they think has potential, with our method, they may be able to make it even more potent,” Dr. Kasko says.

"Engineering Persister-Specific Antibiotics with Synergistic Antimicrobial Functions," ACS Nano, August 18, 2014
Teaching Blood Stem Cells to Regenerate

UCLA scientists have shown how a unique protein in human bone marrow can drive stem cells to repair our blood system after an injury. The discovery offers a roadmap that could lead to more effective radiation and chemotherapy treatments for people with cancer and other blood-related diseases.

Hematopoietic stem cells were a key to the new study. Scientists have long investigated hematopoietic stem cells, which have the ability to become any other type of blood cell, such as red or white blood cells, to try to understand how bone marrow regulates and instructs them to regenerate and repair themselves.

In prior research, John P. Chute, MD, professor of hematology and radiation oncology, discovered that endothelial cells — the cells that make up the lining of blood vessels in our bone marrow — play a key role in telling hematopoietic stem cells how to renew and repair themselves. He theorized that following an injury or another stress to our body, the blood system as a whole benefits, as the activity in bone marrow directly drives the stem cells to promote and accelerate recovery. In the new study, Dr. Chute and colleagues built upon their earlier work to identify a new protein called pleiotrophin (PTN). They discovered that the protein binds to hematopoietic stem cells and that it is this process that activates the blood stem cells to stimulate the recovery of our entire blood system.

Dr. Chute’s team conducted experiments in mouse models to administer PTN after a normally lethal dose of radiation. They found that hematopoietic stem cells and the blood system recovered faster with pleiotrophin than without it, and in two-thirds of the cases the animal survived. Additionally, they found that when they did the opposite — actually blocking PTN and thereby preventing it from functioning — the blood stem cells saw no advantage in recovery. This strongly suggests that the protein is key in accelerating recovery of the blood system.

“We have now discovered the mechanism by which pleiotrophin can instruct blood stem cells to regenerate,” says Dr. Chute, who is a member of the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research at UCLA. “By modeling it for potential use in human patients, this opens the door for tremendous therapeutic possibilities.”

Dr. Chute and his team are currently pursuing a Phase I clinical trial with the goal of accelerated recovery for patients undergoing all types of radiation and chemotherapy, as well as lessened delays between treatments.

“Pleiotrophin mediates hematopoietic regeneration via activation of RAS,” Journal of Clinical Investigation, September 24, 2014

High-magnification photographs (top row) of the bone marrow of mice 10 days after radiation exposure illustrate that PTN treatment improves the recovery of the blood system and that co-treatment with an inhibitor of the Ras pathway blocks this benefit. The bottom row demonstrates that irradiated control mice (at left) have depletion of blood stem cells (c-kit+sca-1+) at 10 days after radiation exposure, but treatment with PTN accelerates recovery of the blood stem cells.

Image: Courtesy of Dr. John P. Chute
Spinal Injury and Bladder Control

People who have suffered spinal-cord injuries often are susceptible to bladder infections, and those infections can cause kidney damage and even death. To address this issue, UCLA researchers studied a group of paralyzed rats and found that with training and epidural stimulation, the animals could empty their bladders more fully and in a more timely manner.

Today’s Lifestyle Choices May Affect Tomorrow’s Memory

If you’re depressed, don’t get enough exercise or have high blood pressure, you may find yourself complaining more about memory problems, even if you’re a young adult, according to a new UCLA study. UCLA researchers and the Gallup organization polled more than 18,000 people between the ages of 18 and 99 about their memory and a variety of lifestyle and health factors previously shown to increase the risk of Alzheimer’s disease and dementia. They found that many of these risk factors increased the likelihood of self-perceived memory complaints across all adult age groups.

The findings may help scientists better identify how early lifestyle and health choices affect memory later in life. The known risk factors the researchers focused on included depression, lower education levels, physical inactivity, high blood pressure, diabetes, obesity and smoking.

“In this study, for the first time, we determined these risk factors may also be indicative of early memory complaints, which are often precursors to more significant memory decline later in life,” says Gary Small, MD (FEL ’83), Parlow-Solomon Professor on Aging and director of the UCLA Longevity Center.

Depression, low levels of education, physical inactivity and high blood pressure increased the likelihood of memory complaints in younger adults (ages 18-39), middle-aged adults (40-59) and older adults (60-99), the researchers found.

Overall, 20 percent of those polled had memory complaints, including 14 percent of younger adults, 22 percent of middle-aged adults and 26 percent of older adults. For younger adults, stress may play more of a role, and the ubiquity of technology — including the Internet and wireless devices, which often can result in constant multitasking — may affect their attention span, making it harder to focus and remember.

The circuitry in the spinal cord is remarkably resilient,” Dr. Edgerton says. “Once you get them up and active, many physiological systems that are intricately connected and that were dormant come back into play.”

Chronic step training under the influence of stimulation results in an increase in spontaneous bladder voiding both during routine cage activity as well as during treadmill stepping.

Graphic: Courtesy of Drs. V. Reggie Edgerton and Parag Gad

“The big deal here is the immediate effect,” says V. Reggie Edgerton, PhD, distinguished professor of integrative biology and physiology, neurobiology and neurosurgery. “There may be a way for a person who has bladder problems to turn the stimulator on and release urine at will. This strategy could have a major impact in improving the quality of life and longevity of patients. We’re not saying it will restore this part of their lives to normal, but we think it will lead to a significant improvement in quality of life,” he says.

Dr. Edgerton believes there is a connection between the neural networks that control walking and bladder function and is planning to investigate the connection. To research bladder control with human subjects, his team plans to place electrodes on the skin over a critical part of the spinal cord and evaluate their improvement. This approach follows on the heels of earlier research by Dr. Edgerton and colleagues from the University of Louisville in which they used epidural stimulation of the spinal cord to enable four young men who had been paralyzed for years to voluntarily move their legs, hips, ankles and toes.

“The circuitry in the spinal cord is remarkably resilient,” Dr. Edgerton says. “Once you get them up and active, many physiological systems that are intricately connected and that were dormant come back into play.”


“Altering spinal cord excitability enables voluntary movements after chronic complete paralysis in humans,” Brain, April 8, 2014
Helping Young Lives Bloom in the Middle of the City

Residents, parents, state-based institutions and non-profit organizations engaged in the Magnolia Community Initiative are interested in the well-being of children and families in low-income neighborhoods of West Adams, Pico Union and the North Figueroa Corridor. UCLA Health is a partner in this effort to address social isolation, family stressors and issues around child-development concerns, helping the initiative to develop a systematic response to those situations or conditions. As a partner with the Magnolia Community Initiative, UCLA Health has acted as a coach to create a community of wellness.

“UCLA is one of our core partners in how we measure progress, success and how we look at longer-term outcomes.”

— Lila Guirguis
Director,
Magnolia Community Initiative

To learn more about the Magnolia Community Initiative and view a video, go to: community.medschool.ucla.edu/magnoliaplace

Photography: Ann Johansson
UCLA pediatrics — the right start for kids

What’s the only thing more important than your health? If you’re like most people, it’s your child’s. At UCLA, we understand. We offer complete pediatric care for infants, children and teens at our hospitals and offices throughout the area. It’s the world-renowned care UCLA is known for, right in your neighborhood — for the ones you care about most.

- General Pediatrics
- Allergy/Immunology
- Cardiology
- Dermatology
- Endocrinology
- Gastroenterology
- Hematology/Oncology
- Neurology
- Ophthalmology
- Orthopaedics
- Otolaryngology (ENT)
- Pulmonology
- Rheumatology
- Urgent Care
- Urology
- And more

They count on UCLA

Mattel Children’s Hospital UCLA

uclahealth.org/mattel  uclahealth.org/getsocial
This Is Your Brain on Food

Weight issues are not just about eating too much and exercising too little. Psychology also can play a significant role. Psychologists Danyale McCurdy, PhD, and A. Janet Tomiyama, PhD, talk about our mind-body relationship with food.

Dr. Danyale McCurdy: You are correct. Our brains haven’t evolved that much in the last 10,000 years. When food was really hard to find, we were expending lots of energy and not consuming very much. Today, we’re in what we call an obesogenic environment. That means food’s plentiful — for most people in this country that means it is just down the street or around the corner — but our atavistic brains don’t know that. So when we go on a fad diet and are in starvation mode, our brains still think we’re on the barren wasteland, we have to go 20 miles to get to the nearest source of food and we’ve got to have it right now. Meanwhile, the food we consume has become much more calorie-dense and nutrient-depleted. This is especially true of low-cost food, which explains the higher rates of obesity in lower-socioeconomic-status populations. It was actually evolutionarily adaptive to be obese in ancestral times. And then there are so many complicated things that go into eating, whether it’s the cognitive control of making the healthy decisions or the rewarding drive to consume food and the punishing effects of exercise. On top of that, in the past 40 years, we’ve gotten a lot more technologically advanced. Food science has become big — labs are making the most palatable, delicious foods our brains could want.

Dr. A. Janet Tomiyama: Clearly, we aren’t much different genetically than we were 50 years ago, yet obesity is a much bigger problem in U.S. society today. What has changed?
Dr. A. Janet Tomiyama: I couldn’t agree more about the effects that sugar, fat, salt — individually and in combination — have on the brain. Our society today is fighting an uphill battle with food companies that have billions of dollars invested in finding the perfect combination that will make us reach for more.

Dr. McCurdy: I worked in a lab in Kansas that does brain-imaging research in obesity. A couple of years ago, they published a paper looking at the most popular food logos and their effect on obese kids vs. healthy controls. The obese children showed significantly less brain activation in the prefrontal cortex than the healthy-weight children when they viewed the food-salient images, which may mean they have less cognitive control over their cravings in response to the popular food logos.

Given how difficult it is when we have so many choices in front of us, would you say public-health efforts to change the food environment around us are likely to be more effective than individual strategies?

Dr. Tomiyama: Definitely.

Dr. McCurdy: Much more effective.

Dr. Tomiyama: Another thing that has changed over the last several decades is our stress levels. I do research on comfort eating — it’s the easiest, fastest and cheapest way to make yourself feel better when you’re stressed.

Dr. McCurdy: That is very true. And when you’re stressed, you produce more cortisol, which makes you store more fat in your belly, which actually decreases levels of the leptin hormone and increases ghrelin, making you more hungry. So if you’re stressed, you store fat differently, increasing your appetite. It’s like a drug.

Dr. Tomiyama: One of my studies shows that dieting itself is stressful and increases cortisol. So in some instances, it can be a no-win situation. The interesting thing is that we’re not the only species that does comfort eating. Mice, rats and some primates also, when they’re feeling stressed, will gravitate toward high-fat, high-sugar foods. And that actually does dampen these biological stress-responsive systems. So that kind of eating is not all bad, at least in the short term.

Dr. Tomiyama, you have written about the physical toll of the stigma society places on weight. What are the physical implications of society’s views?
“Focusing on weight as the thing to change is part of what creates the stress in the first place.”

Dr. Tomiyama: It’s become evident that experiencing discrimination on a daily basis, even when it’s not overt, triggers stress processes that can negatively affect health. It’s much less acceptable than in the past to say prejudiced things about women or ethnic minorities, but about people who are overweight ...

Dr. McCurdy: It’s the last acceptable prejudice.

Dr. Tomiyama: Right. And it would make sense that having this blatant societal stigma against how you look has to take a toll on your health by revving up your stress levels. We recently conducted a study that found that to be the case.

Dr. McCurdy: Weight is seen as something you have control over, and in our society, self-control and will power are viewed as virtues. The thinking is that if you can’t control your food, you can’t control anything.

Dr. Tomiyama: What’s interesting about obesity stigma is that normally if you’re in a minority group, you have in-group favoritism, where you like the members of your group.

Dr. McCurdy: We get each other, we’re on the same team.

Dr. Tomiyama: Exactly. But in the case of overweight and obese individuals, we often see in-group derogation. Unfortunately, these messages that overweight or obese people are bad are getting through to everyone. And I think the health component is important here, because it gives people a justifiable reason to not like overweight people. It’s not that I don’t like the way you look, the thinking goes. It’s that you’re unhealthy, and that’s bad.

Danyale, I wanted to get your thoughts on this emerging science on the obesity paradox — how the lowest levels of mortality are at a BMI of 25-to-30, which actually is in the overweight range. By far, the unhealthiest BMI to have is very thin. And so the negative health consequences of being a certain weight, I think, are a bit overstated. Now, if you’re unhealthy you’re unhealthy, but having this laser focus on weight really does people a disservice.

Dr. McCurdy: Yes, it does. There’s also this category called the “skinny fat” — people who look thin or normal weight but who actually have a lot of adiposity because they’re not very fit. They have worse health outcomes than people who have a BMI of 26 or 27. Another thing is how this affects eating disorders. We know that the more obese people there are in a population, the more disordered eating there is, whether it’s anorexia, bulimia or binge-eating disorder. People with binge-eating disorder report so much shame and guilt and eat secretly, and, obviously, if you’re doing that all the time, you’re probably going to consume more food than you would if you were going out socially. So again, it’s this circular reinforcing pattern of the more shame you feel over eating, and the more stigma you feel about your body, the more you’re going to eat alone, and then when you’re alone, you eat more. Of course, there is a genetic component too, just like with obesity. The heritability for obesity is, what, up to 70 percent?
“There are more obese women than men, but what I’m especially concerned about is that there are dramatically more psychological ramifications for obese women than there are for obese men.”

Dr. Tomiyama: It’s as heritable as height. Women also think of themselves as overweight at a much lower weight than men do. The average BMI at which they consider themselves overweight is 23, which is well-below the actual overweight cutoff. So there’s some self-stigmatizing going on.

Dr. McCurdy: There are more obese women than men, but what I’m especially concerned about is that there are dramatically more psychological ramifications for obese women than there are for obese men.

Related to the stigma?

Dr. McCurdy: I think so. And obese adolescent girls are a lot more likely to attempt or follow through on committing suicide than obese adolescent boys.

Why do so many dieting efforts fail?

Dr. Tomiyama: The first thing I would like to put out there is that focusing on weight as the thing to change is part of what creates the stress in the first place. What we really want to do, and what you, Danyale, are doing, I assume, with your pediatric-obesity work, is trying to get kids healthier overall.

Dr. McCurdy: That’s right. We don’t ever use the words “lose weight” with kids.

Dr. Tomiyama: Everyone always wants to know what works. I always recommend exercise, because that not only is good for you, but it also decreases your stress levels. Of course, if you’re overweight, do you really want to go to the gym and get in some workout gear? So it’s certainly not easy. In terms of why dieting is so often unsuccessful, it’s exactly what Danyale said — evolutionarily, the people who survived were those who were able to hang on to their calories as much as possible. So our bodies are programmed to decrease metabolism way down when we start starving ourselves. I also think there’s a psychological aspect here — when you’re hungry, you can’t think as well. The more rational parts of your brain have to work harder to regulate. And, so, it’s a tough battle to make good food choices when you’re in that state.

Dr. McCurdy: I try to talk to people about a whole lifestyle change. It’s not just making these changes now, it’s opening your mind to having a different future. As opposed to dieting. People who are successful at maintaining a healthy weight tend to have more cognitive executive control. We make hundreds of health decisions every day. There are so many points where you can make the wrong decision. For people who struggle with this, it’s really hard. If you are a drug addict, you can manage to live the rest of your life without having heroin, but for people with eating disorders, it’s like being a heroin addict who tries to give himself just enough heroin three times a day for the rest of his life to get by. It’s the hardest thing to fight, and I have so much empathy for people who face that battle.

“It’s become evident that experiencing discrimination on a daily basis, even when it’s not overt, triggers stress processes that can negatively affect health.”
The answer is not always as simple as we eat too much and exercise too little. Science is now starting to offer deeper insights into this weighty question.

By Greg Critser • Photography by Ann Johansson

What Makes Us Fat?

Why are so many of us fat? Because we live sedentary lifestyles that neither demand nor encourage us to get up and move. It’s our diet: the fat in our food, high-fructose corn syrup in our super-sized drinks, too-many carbs, too-little fiber, insufficient protein. In many communities, the root cause may be more nuanced: poverty, food deserts and even federal agricultural policy. Walk into a large bookstore, and there are rows upon rows of hardcovers and paperbacks that expound on the subject. Go to a dinner party, and just about everyone at the table will have his or her own theory. And most all of them will be based on science.

This may be the current state of the discussion, but all of it is confusing to the public and does nothing to provide people with a rational approach to addressing weight, asserts David Heber, MD (RES ’77, ’79), PhD ’78, founding director of UCLA’s Center for Human Nutrition. “Everyone has their own idea of what we ‘know’ about obesity, and lots of non-scientists consider themselves to be nutrition experts simply because they eat,” he says. “But the fact is, the science of obesity has only become a respectable field of science since the late 1970s, and now we finally are making significant progress.”

Medicine beckons that science. Although the numbers have declined slightly, almost two-thirds of Americans are classified as overweight, with nearly one-third of them being obese — overweight enough to experience one or more chronic diseases. A growing number have type 2 diabetes (a condition Dr. Heber refers to as diabesity), sleep apnea, kidney disease and heart problems. Obesity also increasingly is thought to be driving an epidemic of nonalcoholic fatty liver disease, which in turn is leading to many more patients who are developing cirrhosis and in need of a lifesaving transplant.

What’s more, according to a study published by health-policy researchers at Cornell University in 2012, obesity and its associated complications cost the U.S. healthcare system upward of $190 billion annually and account for an astounding 20.6 percent of the nation’s healthcare costs. Weight-control drugs have failed and in some cases been found to themselves cause significant health damage. Public-health campaigns? They have yielded few measurable results. That’s left us with little firepower with which to battle an epidemic that, if the trend continues, could result by 2050 in a U.S. population in which most everyone is overweight or obese.
Is it a matter of individual responsibility? Environment or behavior? There simply is no one factor. At UCLA, investigators are looking at many promising avenues of research to better understand obesity and perhaps translate them into prevention and public-health strategies. Increasingly, many of these researchers believe the answers are buried deep within us, to be excavated by more forward-thinking science. As Dr. Heber says, “We can do a lot now as individuals, but the issue for science is pretty basic: We’ve got to understand the core mechanisms of weight gain, obesity and diet, and those are complex.”

Indeed they are. In fact, we can trace the core mechanisms of obesity back hundreds of thousands of years, to our origins as human beings. “Obesity is so complex,” Dr. Heber says, “because it is the end result of many different pathways that have been designed over the eons to maintain our bodies in the face of starvation.” At our beginning, food was a scarce and difficult-to-obtain resource, so our bodies learned to hoard the calories necessary to provide us with the energy we needed to survive. It is only within the past few hundred years or so that the food supply has become sufficiently available to provide secure and ample nutrition. “Our bodies haven’t had time to adapt to that change,” Dr. Heber says. “We still crave more food.”

So as we grapple with this complicated issue, there are many different avenues receiving scientific scrutiny. At one level, there is the seemingly simple calculus of energy in, energy out. Our forebears stored up calories from what food they were able to scrounge to carry them through lean periods, but they also expended calories in the pursuit of something else to eat. Of course, that is not how most of us now live. “In this day and age, our bodies have few defenses against excess eating and a sedentary lifestyle,” Dr. Heber says.

What we eat is, of course, another significant contributor to the problem of obesity. But that, too, is complex. Consider the ongoing discussion about diet. For years, dietary wisdom held that fat was the main culprit underlying weight gain and that consumers should cut...
The issue for science is pretty basic,” says Dr. David Heber. “We’ve got to understand the core mechanisms of weight gain, obesity and diet, and those are complex.”

way down on fat and eat more carbohydrates. But that ignored the role of simple carbohydrates, hidden sugars and low-protein intake that drive the obesity epidemic. The evidence for this position keeps building. One of Dr. Heber’s colleagues in obesity research, George A. Bray, MD, at Louisiana State University’s Pennington Biomedical Research Center, has teased out some of the more exquisite details. Dr. Bray, a dean of modern obesity science, replicated weight gain by overfeeding adult volunteer subjects by the same number of calories. He broke the subjects into three groups, and each group was assigned a different percentage of protein in its meals. The members of one group got 5 percent of their calories from protein, another got 15 percent and the third group got 25 percent. The results were eyebrow-raising: After eight weeks, the participants in the low-protein group had a lower amount of the desired lean-body mass than they had pre-study; they also showed the largest increase in fat mass among the three groups. The medium-protein eaters gained both lean-body mass and body fat. But it was the members of the high-protein group who evidenced the biggest drop in fat mass and the most gain in lean-body mass. “Findings like that have pointed us all in a new direction,” Dr. Heber says.

Now when Dr. Heber examines a new patient, he matches the amount of the patient’s lean-body mass with the amount of protein in his or her diet at a rate of 1 gram of protein per pound of lean-body mass, which turns out to be about twice the amount originally suggested by the U.S. Department of Agriculture but well within the 2010 guidelines of the Institute of Medicine of the U.S. National
The Academy of Sciences. “We encourage patients to build protein consumption and lower their fat and refined-carbohydrate intake,” he says. “The combination tends to maintain lean-body mass during weight loss and control hunger. And if you control hunger with protein, you have a greater opportunity to make better food choices.”

If there’s one thing most everyone engaged in the obesity debate can agree on, it’s that environment matters. That extends beyond the usual environmental culprits of poverty, poor shopping alternatives, fast food on every corner (and much of the block in between) and recreation-poor neighborhoods. Environment also means people — specifically, the people closest to you, your social network. In a 2007 study published in the New England Journal of Medicine of more than 12,000 people tracked between 1971 and 2003, researchers from Harvard Medical School’s Department of Health Care Policy found that a person’s chance of becoming obese increased by 57 percent if he or she had a friend who became obese in the same interval. The same is true of adult siblings; if your brother becomes obese, the chances that you also will be obese rise by 40 percent. If your spouse becomes obese, the risk increases by 37 percent. As Dr. Heber points out, “Obesity can be socially and psychologically contagious.”

If one’s external environment plays a big role in weight gain and obesity, so, too, does one’s internal environment, what the 19th-century French physiologist Claude Bernard dubbed the milieu intérieur. Most of us may have heard this termed as homeostasis, the state of physiological balance that our body struggles to maintain every day. It’s what happens when we take, for example, a blood-pressure medication to push unhealthy levels back to healthy ones. And it’s what happens when we eat breakfast, lunch or dinner, restoring our energy balance. This exquisite equilibrium is regulated, in large part, by hormones, which, in turn, are regulated by the brain.

The body gets many of those regulatory cues from three key neural structures: the hypothalamus and the pituitary and the adrenal glands — also known as the HPA axis. The HPA axis does a good job telling other organs when to rev up and when to downshift. When it comes to food intake and energy expenditure, the axis is often the critical factor governing weight gain, loss or maintenance. It’s how we maintain internal balance. One can easily imagine how modern life and its attendant daily stresses disrupt the axis and leave our bodies in perpetual imbalance. Scientists have known this for decades.

But through the work of researchers like Yvette Taché, PhD, professor of digestive diseases and co-director of the UCLA Gail and Gerald Oppenheimer Family Center for Neurobiology of Stress, we now know something new about stress: The classic beneficial stress response — fight or flight — can be hijacked by other stressors. She cites a recent review by Erik Hemmingsson, PhD, of the Obesity Center of Karolinska University Hospital in Stockholm, Sweden, published in Obesity Reviews, that points out that "psychological and emotional distress is a fundamental link between socioeconomic disadvantage and weight gain." Among those socioeconomic disadvantages triggering stress responses are poverty, family distress, unemployment, low education, marital discord, work stress and emotional distress.

The science of obesity has only become a respectable field of science since the late 1970s, and now we finally are making significant progress.”
environment, poor self-esteem and depression. “The chronicity of these factors combines to disrupt our usual adaptive responses and adversely affects health,” Dr. Taché says. They can do it in almost cryptic ways that only now, under the light of modern technology, reveal themselves.

Consider stress and palatability — our taste for fatty, sugary foods, or what we often call comfort foods. The phenomenon is easy to observe: One gets upset, tears into a bag of cookies (or potato chips or a carton of ice cream) and feels better. At least momentarily. But why cookies and not an apple? Dr. Taché theorizes, as do others, that the HPA cycle gets tweaked when stress becomes chronic and then may reshape our taste preferences. There is also clinical evidence that for some obese patients, the drive to overeat palatable food is considered as a form of addiction through the activation of reward systems.

A key suspect is corticotropin-releasing factor (CRF), a family of neuropeptides that Dr. Taché has studied for nearly three decades in relation to its influence on the alterations of gut function. Other studies have shown its implication in a series of other bodily responses, including playing a key role in the neurobiology of addiction. With regard to appetite control, experimental studies showed that CRF inhibits food intake that is normal and beneficial in the context of the “fight-or-flight” response, a primitive, automatic, inborn response that prepares the body to “fight” or “flee” from perceived attack or from harm or threat to our survival. But when stress becomes an everyday experience, CRF-induced chronically elevated glucocorticoids promote the acquisition and redistribution of energy stores into visceral fat. Insulin levels also are increased, leading to insulin resistance. In addition, stressed lab rats, for example, will almost always choose a high-fat option when presented with a choice of meals. Fatty meals lead to ... the answer is obvious.

The process might even begin before birth, when stress-driven insulin loads from the mother can affect the proper development of weight-regulating organs in the in-utero infant. A vicious cycle ensues, often tracking the ups and downs of the parents. Job insecurity leads to anxiety leads to family discord. That causes the child observing all these dips and spikes to develop increased stress sensitivity, which in turn produces increased feelings of vulnerability. Now consider what happens when this child is presented with comfort foods: They choose foods — and quantities of that food — that take the edge off. They eat. They gain weight. They become obese. Dr. Taché and her group may be on to something new, though. CRF, it turns out, has a lesser-known relative, corticotropin-releasing hormone receptor 2 (CRHR2), a protein that seems to restore the balance of some biological disturbance caused by CRF. “They are the yin and yang in aspects of stress response,” Dr. Taché says. CRHR2 presents new opportunities for a breakthrough. “If proper tools can be developed,
they can help people who are under chronic stress and somehow break that cycle,” she says.

It may eventually involve some kind of pill. But it also will mean having to change one’s ways. Like Dr. Heber, Dr. Taché says there is no way around the fact that a person’s lifestyle matters and not just the eat-less-move-more variety of lifestyle. “Even the way a family eats can make a huge difference,” she says. “The European way of eating — longer meals, smaller portions, few snacks and desserts — might be a good goal. The longer you remain at the table, the more you allow the body’s natural processes to work to feel satiated through the release of gut hormones.”

Gene expression in the gut might be another fruitful avenue for exploration to address obesity issues, suggests Eric Dutson, MD, surgical director of UCLA’s Center for Obesity and Metabolic Health. Following bariatric surgery, Dr. Dutson has noticed that some patients experience an often dramatic change in their food preferences. High-fat, high-sugar foods, for example, disgust them. He posits that in such cases, surgical alteration of the stomach also alters hormonal signaling between the gut and the brain. “The gut,” he says, “is like the second brain, and we know little about how it functions in that regard.”

With gastric-bypass surgery, it appears that areas of the gut with high levels of hormonal-gene expression go silent, leading to decreased hunger signals for high-fat foods. Another factor: bacteria in the gut, known collectively as the microbiome. A growing body of work suggests that shifts in the composition of gut bacteria may fuel weight gain. “We don’t know exactly how that works,” Dr. Dutson says, continuing that he looks forward to the creation of a major center at UCLA to collect and analyze a wide range of bacterial species from the microbiome. “Even if we don’t fully understand the workings of such processes, it’s important for patients to know just how deep-seated are the forces arrayed against them,” he says.

If the gut is our body’s “second brain,” signaling us when and what to eat, it also may be a source contributing to other obesity-related disorders beyond the well-known conditions of heart disease and diabetes. Consider, for instance, inflammatory bowel disease (IBD), which affects about 1.4-million Americans. Two primary conditions fall under the umbrella of IBD: Crohn’s disease and ulcerative colitis. Both are driven by an overactive immune system — the body reacts to food as if it were a toxin, then sends out specialized cells to attack the intruder. In the process, surrounding tissue becomes inflamed, leading to a cascade of ever-worsening intestinal events: diarrhea, cramps, fever, bleeding and fatigue.

**IT IS A QUESTION ALMOST EVERY OVERWEIGHT PERSON HAS ASKED:** Why is my best friend able to eat the same junk as I do but not gain weight? That question has been as frustrating for science as it is for our expanding selves. While we’ve recognized that genetics plays a role in weight, until recently, we haven’t had the research tools to study something as complicated as individual genetic differences in how we gain weight.

That has changed in the UCLA laboratory of A. “Jake” Lusis, PhD, professor of medicine, microbiology and molecular genetics and vice chair of human genetics. Dr. Lusis has been a force in the growing field of systems biology. Systems biology expands from the idea that most biological responses don’t have a single, clear genetic basis; rather, most involve other genes and other bodily responses to the environment. For example, genes tied to the brain and its hunger signals may link to other genes implicated in diabetes or heart disease. In the case of obesity and diet, the effect of the environment — of fatty and sugary foods, of disease, germs and stress — can differ depending on our genes. The trick, Dr. Lusis says, is figuring out how to measure all the intricate differences within an organism and to see how they fit into the whole. “We want to know how all these pieces act together to produce the different effects we observe,” he says. “Like obesity and diet — how does that really play out?”

One of his lab’s more remarkable achievements in recent years has been the development of a core group of 100 genetically distinct mice — hybrid-mouse diversity panel, or HMDP. Dr. Lusis and his postdoctoral fellows expose the mice to different environments, such as fatty food, and then examine them for their genetically specific responses. The results become meaningful when genes in a specific genetic strain match what is known about obesity genes in humans.

“Psychological and emotional distress is a fundamental link between socioeconomic disadvantage and weight gain.”
In a recent study, Brian Parks, PhD, a postdoctoral researcher in Dr. Lusis’s lab, did exactly that. The outlines of the experiment were fairly straightforward. “First we had to create a diet similar to a Big Mac and a Coke,” Dr. Parks says. To do that, the lab formulated what might be called fast-food chow pellets — 32 percent of calories from fat and 25 percent of calories from sugar. After feeding the animals a regular chow for eight weeks, Dr. Parks switched them to the junk-food diet for another eight weeks. The differences in gains of body fat were striking. Increases in body-fat percentage ranged from 0 to more than 600 percent in the different strains; many of the suspected fat genes in the mice overlapped with known obesity genes in humans. But there also was a puzzle. “Unlike humans, the amount of food the mice were eating did not change. So we knew there must be something else driving this,” Dr. Parks says.

What might that be? Here is where systems biology, and its ability to parse many factors at once, paid off handsomely. Knowing that different kinds of bacteria in our gut affect weight gain, Drs. Lusis and Parks, and other researchers in the lab, devised a follow-up experiment. After feeding the junk-food pellets to their mouse panel, they tracked the bacterial composition of their guts. “What we found was that the composition of the gut shifted from bacteria that seem to inhibit fat gain to types of bacteria suspected to increase fat gain,” Dr. Parks says. “And they did this in different degrees, depending on the strain.” It was a classic systems-biology triumph — a dynamic measure of genes, diet, obesity and bacteria. As Dr. Lusis says, “It’s exactly the kind of multilayered findings we want.”

**IF THERE WAS EVER A THORNY QUESTION** for obesity researchers, it’s that of women and weight gain. And our newest insights again come through systems biology and the work of UCLA’s Karen Reue, PhD. For more than a decade, Dr. Reue, professor of human genetics, has worked to understand one gene, lipin, and its role in fat storage. It’s been a fruitful interrogation: In 2005, she and her associates showed that lipin was implicated in both severe fat loss (known as lipodystrophy) and severe fat gain (obesity). Their discovery fit into her overall research interests. “I’ve long been interested in obesity and homeostasis,” she says. “I truly believe you need a critical amount of fat. But everything is about balance and how our bodies achieve that balance.”

That led her to her most-recent quest, to reveal the mechanisms that control female weight gain.

“For a long time, the answer was hormones, hormones, hormones,” Dr. Reue says. “But with what I was seeing with lipin and other genes, I knew it had to be more complicated than that. There had to be something else, a genetic component.” To put the question another way: Why do women, who have two X chromosomes, gain fat so easily, compared with men, who have one X chromosome? How do you discern what part is hormonal and what part is driven by genes?

The answer came via the ingenious methodologies of mouse genetics. Dr. Reue’s colleague in the UCLA College, Arthur P. Arnold, PhD, distinguished professor of integrative biology and physiology, director of the UCLA Laboratory of Neuroendocrinology and editor-in-chief of the journal *Biology of Sex Differences*, came up with one approach. Like Dr. Lusis, Dr. Arnold built a mouse core — a quartet, in this case — of specially designed mice. Some of the mice had female gonads with either XX or XY sex chromosomes; others had male gonads with either XX or XY sex chromosomes.

“That allowed us to tease out the different effects of hormones and sex chromosomes,” Dr. Arnold says. The results were telling: compared with XY mice, XX mice, whether gonadally female or male, had up to twice the increased fat. They also showed greater food intake during daylight hours, when mice are normally inactive. The XX mice also developed fatty livers and registered high blood-fat and insulin levels. The fact that both developed greater obesity, with or without hormones, comes from the presence of the extra X. The second X chromosome, Dr. Reue muses, “may be at the root of many differences between males and females in the development of obesity.”

It was exactly the kind of new insight that systems biologists crave. “We are always looking at other factors beyond calorie inputs and outputs, and this shows how several factors conspire to change metabolism,” Dr. Reue says. She speculates that more investigation of the X chromosome might identify specific genes that influence behaviors such as night-eating syndrome and propensity to store fat.

“The European way of eating — longer meals, smaller portions, few snacks and desserts — might be a good goal. The longer you remain at the table, the more you allow the body’s natural processes to work to feel satiated through the release of gut hormones.”
All of this is heady stuff for Dr. Heber, who has been fascinated with obesity since the late 1970s, when he was in his residency at UCLA in medicine and endocrinology. After joining the faculty and while studying the problem of malnutrition and starvation in cancer patients, he started to notice an increasing number of patients in the endocrine clinic with type 2 diabetes and obesity. “I looked at this and decided it was the flip side of what I was studying in cancer patients, who were starving,” he says. At the time, obesity was barely on anyone’s radar. “I mean, when I got into it, everyone would ask, ‘Why are you doing that? You’re in a much-better field already.’” But the vexing nature of obesity and its treatment was too compelling for him to pass up.

As he mines new veins of obesity research, including the role of gut microflora and the effects of plant substances called polyphenols on fat cells — “Some people say I am a little too far out there,” he says — Dr. Heber also is looking for ways to communicate about the issue. He has written numerous journal articles on diet and nutrition and several mass-market books; one of his best-known books, The L.A. Shape Diet (Harper Collins, 2005), which delves into issues of genetics, protein requirements and nutrition, was republished in 2014. And he’s found a new pet cause: physician education. Although there’s been some improvement over the years, most medical schools still don’t require classes in nutrition science. (At UCLA, nutrition is incorporated throughout the integrated curriculum in the first and second years of medical school.) Dr. Heber wants the subject to be a standard requisite nationwide. “Because obesity-related disorders differ so much from person to person, we’ve got to get better at the doctor-patient interaction on obesity. We must give doctors the necessary tools, both scientific and behavioral, so that they can motivate their patients to change,” he says. After all, whatever the underlying causes of obesity are found to be, it still remains a condition for which the patient must take a measure of responsibility. “Doctors,” Dr. Heber says, “have to get the message across to their patients: If you don’t change your behavior, you’re in big trouble.”

THROUGH
It used to be that fat was our friend, something we depended upon for our very survival. How is it that today our once-healthy relationship has become, instead, a recipe for disease?

Relationships are complicated. The relationship between fat and the human body? Let’s just say there’s a lot of history there. In the ancient past, our ancestors relied on fat to keep them alive. But today, it’s hard to think of the relationship as anything but troubled. After all, obesity has been linked to more than 20 chronic diseases that have been sharply on the rise in recent decades, including type 2 diabetes, cardiovascular disease, hypertension and stroke.

In light of this, humanity’s relationship with fat may best be viewed as a once-glorious partnership now gone tragically awry — a tale of need and betrayal, dependence and survival.

Our relationship with fat was admittedly always a one-sided affair. We consumed fat and used it to our evolutionary advantage. Its energy fueled our active, free-roaming lifestyle, empowering us to hunt for food and migrate across continents. It helped us compete with our enemies — giving us the strength to fend off predators and rivals and to fight microorganisms that cause infection. Fat even supported our intellectual growth, powering our fortuitously large primate brains.

What we didn’t burn for energy, we stored. Humans, like all mammals, have adipocytes, fat cells, which store calories until we need them. Adipose tissue — what we commonly think of as “body fat” — serves as an energy reserve. We appreciated having fat around. It kept us warm at night; it saw us through life’s ups and downs.

“For hundreds of thousands of years, fat helped us get through hardship and famine, natural disasters, starvation,” explains Kamyar Kalantar-Zadeh, MD, MPH, PhD, professor of epidemiology in the Jonathan and Karin Fielding School of Public Health at UCLA and principal investigator in the Harbor-UCLA Medical Center Biomedical Research Institute. “Who survived? Those who were able to maintain their fat reserves.”

Those among us who possessed genes that favored this accumulation of fat had a massive advantage in hostile climates and inhospitable terrain. They survived their environment, passing their fat-hoarding genes on to future generations. Those who didn’t possess that advantage died off.

FOR YEARS, FAT HELPED US THRIVE, but the good times weren’t to last. Things changed after industrialization. As human ingenuity generated ways to automate agriculture, food became plentiful, and improved methods for transportation and storage made it easier, in the developed world, to get the food we wanted anywhere and anytime we liked. Instead of hunting, we had factory farms; gathering became a quick stop at the local food store. We developed a taste for new things, like fast food and complex carbohydrates.
Metabolic syndrome — a cluster of risk factors associated with heart disease, type 2 diabetes and stroke, among others — involves several biological features that tend to go hand-in-hand with obesity. It is estimated that the average American consumes, on average, 500 more calories per day than 50 years ago. To make matters worse, we’ve become more sedentary, so even as we’re consuming more calories, we’re burning less. It’s a familiar story; we’ve changed, but fat hasn’t. Fat is still in the same place, doing the same job. It’s clinging to us, acting as if nothing has happened.

The problem, says hepatologist and gastroenterologist Simon Beaven, MD (FEL ’08), PhD ’10, is straightforward physiology. “Everything you eat gets processed in the liver, then packaged and sent to appropriate places in the body,” he explains. “When you eat an excessive meal and you don’t need it all for energy, the liver sends the excess to be stored in the adipose tissue around your waist and elsewhere.”

Our modern excess has led much of what we consume to be stored in these “fat depots,” and obesity has reached critical mass. More than one-third of adults and 17 percent of children in the U.S. now weigh in as obese. Because of its connection to numerous chronic diseases, obesity has become the primary public-health concern of the 21st century. It is clear from this that our relationship with fat has grown very unhealthy, indeed. To understand what went wrong, it’s important to recognize that fat has never been a passive partner. It doesn’t just loaf around waiting to be burned; it’s an active participant in our biological systems. Fat secretes hormones and other substances that affect metabolism, and these products play a role in disease — roles that researchers are still trying to understand.

For example, metabolic syndrome — a cluster of risk factors associated with heart disease, type 2 diabetes and stroke, among others — involves several biological features that tend to go hand-in-hand with obesity, including high triglycerides, cholesterol, blood sugar and blood pressure and a large waistline. While the exact mechanisms by which these biological processes are causing disease are unclear, scientists are amassing solid evidence that fat is a major player in varied disease states.

Recently, Steven Horvath, PhD, ScD, professor of human genetics and biostatistics, used an “epigenetic clock” — a time-keeping mechanism that monitors DNA activity to measure age in human tissue — to show that obesity accelerates aging in the liver. This premature aging could account for the frequent early onset of age-related liver disease in those who are obese.

Dr. Beaven, director of UCLA’s Metabolic Syndrome Program in the Division of Digestive Diseases, and Peter Tontonoz, MD, PhD, professor of pathology and laboratory medicine, also have led studies examining the role of obesity in liver disease. Among other findings, they’ve shown that lipid-fat metabolism plays a role in activating stellate cells — star-shaped cells that, once stimulated, cause scarring in the liver. The findings have serious implications in a time when fatty liver disease is on the rise — in large part because of the obesity epidemic. Fatty liver disease can lead to more serious conditions including cirrhosis and liver cancer that require liver transplantation. Ironically, the increasing prevalence of fatty liver disease in the population also is reducing the number of viable organs for transplant.

This active signaling between fat and other cell types has also been noted by Charalabos “Harry” Pothoulakis, MD, director of basic research at the UCLA Center for Inflammatory Bowel Diseases in the Division of Digestive Diseases. His lab has found evidence that mesenteric fat, the fat that lies close to the intestines, participates in the pathogenesis of inflammatory bowel disease (IBD). The team noted that the molecules secreted from fat cells during IBD can activate inflammatory pathways in the colonic mucosa of patients with ulcerative colitis and Crohn’s disease and that the makeup of the signals these fat cells secreted is distinct in each disease.

“We know that fat cells are not inert; they function like little organs, excreting all kinds of chemicals,” Dr. Pothoulakis says. For patients with IBD who also are obese, this process can have a major impact. He and his colleagues have observed that disease progression for obese patients can be significantly more dramatic than for thinner patients, and the symptoms are much worse.

“This suggests that symptom-making products from the fat depots surrounding the intestine during gut inflammation may directly affect the pathophysiology and the extent of disease,” Dr. Pothoulakis says. “We now know that this is
Fat has also been shown to play an unexpected beneficial role in chronic disease, suggesting that it may be able to help us through at least some of the messes it creates.

For the objective observer — one who wasn’t around for the good times, when we had a healthier relationship with fat — it might be tempting to ask: Why not just kick fat to the curb? Why not solve the obesity problem by getting rid of adipose tissue altogether? Dr. Tontonoz says it isn’t that simple.

“What is often unappreciated is that fat is actually ‘a good guy,’” he says. “You need a place to store calories for energy, and if you don’t have adipose tissue, those calories will go to other tissue and may cause even more problems.”

To make his point, Dr. Tontonoz, who also is an investigator with the Howard Hughes Medical Institute, points to those who lack adipose tissue due to a genetic defect. These individuals paradoxically share symptoms in common with type 2 diabetes patients. They have excess lipids floating around in the body, and if those lipids can’t find a home in adipocytes, they deposit in other tissue, wreaking...
Research by Drs. Gregg Fonarow (left) and Tamara Horwich has shown that in some instances, obesity can benefit some patients and protect them from the adverse effects of disease.

Photo: Ann Johansson

havoc in the body. “People without adipose tissue are extraordinarily sick,” Dr. Tontonoz says.

Fat has also been shown to play an unexpected beneficial role in chronic disease, suggesting that it may be able to help us through at least some of the messes it creates. “Obesity is, without question, a key risk factor for many chronic diseases,” explains Gregg Fonarow, MD ’87 (RES ’90, FEL ’93), Eliot Corday Chair in Cardiovascular Medicine and Science and director of the Ahmanson-UCLA Cardiomyopathy Center. “But once that disease state has surfaced, obesity may then paradoxically play a different role; it appears to provide protective or survival advantages.”

DR. FONAROW AND HIS COLLEAGUE, Tamara Horwich, MD (RES ’02, FEL ’06), began to look into the relationship between body mass index (BMI) — the most common measurement used to assess obesity — and outcomes for heart-failure patients. The expectation was that they would see shorter survival rates for individuals with pre-existing heart failure who were also obese. For both men and women in the study, that meant a BMI ranging from 25 to 29 (overweight) to 30 or higher (obese) with a waist circumference of 40 inches or greater for men and 37 inches or greater for women. There was a hope — and an expectation — that advising patients to lose weight might improve their heart-failure state and help them survive.

“When I was compiling the data and doing my analyses, I thought I was doing something wrong because I was getting the opposite result from what we expected,” Dr. Horwich says. “I was finding that patients, both men and women, who were overweight or even obese were having better outcomes. They were living longer.” On the other hand, men and women with a normal BMI and waist circumference were shown to be at a substantially higher risk for adverse outcomes, such as the need for a heart transplant, placement of a ventricular-assist device — or death.

Their findings were published in 2012 in the American Journal of Cardiology, and this phenomenon has come to be known as the “obesity paradox.”
Dr. Horwich, associate professor of medicine and cardiologist at the Ahmanson-UCLA Cardiomyopathy Center, says that BMI has often been considered a questionable measure of obesity, since it can’t discriminate between fat and muscle mass. There was some suspicion that the so-called obesity paradox they had identified was an artifact of this and other confounding factors. 

Dr. Horwich started to measure her heart patients’ waist circumference, possibly a better indicator of fat composition, and later measured fat by bioelectrical impedance analysis, a special scale that uses sound waves to determine how much weight is due to fat mass and how much is from muscle. With every method she and her team have used, they’ve found that excess fat consistently correlates with better health outcomes in heart-failure patients.

**OTHER STUDIES HAVE SHOWN** the obesity paradox also to exist in other types of cardiovascular disease — in patients with coronary artery disease, in those recovering from heart attacks, in patients undergoing bypass surgery. It has also been seen in a wide variety of other diseases — chronic kidney disease and kidney cancer; chronic obstructive pulmonary disease; and HIV/AIDS, to name a few. Research published early last year, led by Katherine Flegal, PhD, of the U.S. Centers for Disease Control and Prevention, even suggested that, for those over the age of 65, being overweight may confer as much as a 10-percent survival advantage.

The assumption is that this excess fat provides a large, metabolic reserve that provides chronically ill patients with the energy to fight disease, giving them an advantage over their normal-weight counterparts. The finding has made for some uncomfortable conversations in the public-health community, where many would prefer we cut fat out of our lives completely.

“The concept of the obesity paradox has continued to face opposition for some very good reasons,” explains Dr. Kalantar-Zadeh, who has observed and written extensively on the paradox in chronic kidney disease. “The public-health community is focused on fighting obesity, so to say that there’s a chance that obesity in some people is good complicates what some feel should be a streamlined public-health campaign against obesity.”

**“WHAT IS CRITICAL AND SHOULD NOT BE CONFUSED”** is that obesity is clearly a risk factor for a number of severe chronic diseases. No one should feel that it is a good idea to become overweight or obese with the thought that, should they eventually develop heart failure or one of these other disease states, it may protect them. To do so would be putting themselves at far-greater risk for developing these disease states in the first place,” Dr. Fonarow says, echoing sentiments shared by Dr. Kalantar-Zadeh, Dr. Horwich and other clinicians who have studied the paradox.

All three doctors do recommend that this complex relationship with fat be taken into account by clinicians when making health recommendations for aging populations and for those with chronic disease. “Doctors’ office notes often default to say ‘lose weight,’ but that may not be good for all patients,” Dr. Horwich says. “What the obesity paradox shows is that we can’t take a set of guidelines from one population — for instance, healthy populations — and extrapolate to sick populations and expect that the guidelines should be the same for everybody. That’s really the basic tenet of personalized medicine.”

Given the increase in the number of people suffering from chronic disease and the swelling population of the aged and elderly, a shift in approach has the potential to affect tens of millions of people, and emerging research on the obesity paradox suggests that the official position on obesity may need to be refined for some select populations.

“In this day and age, we don’t have starvation and natural disasters to the same degree. Getting older, chronic diseases, cancer, these are the hardships that we deal with now,” Dr. Kalantar-Zadeh says. “In the past, it was fat that helped us through our hardships; in the same way fat protected us for many thousands of years, it continues, in some instances, to protect us today.”

Veronica Meade-Kelly *is a science writer at The Broad Institute of MIT and a frequent contributor to Harvard Medicine magazine.*
Package Deal

By Shari Roan

Veronica Romero’s obesity during her pregnancy set off a cascade of events with implications for both her and son Anthony.

Photo: Ann Johansson
Veronica Romero was 21 years old and worried. Pregnant with her first child, she was putting on a lot of weight. Her obstetrician leveled with her: “You’re gaining too much.” But as she neared 50 pounds of weight gain near the end of her pregnancy, Romero felt helpless. “I tried to watch what I was eating, but it was so hard. Pregnant women get cravings, and my cravings were sugary,” recalls Romero, who had fought her weight even before conceiving. “I tried to eat carrots and small appetizers, but it didn’t work. I was disappointed. I didn’t want to get bigger.”

The pregnancy set into motion a health crisis on two fronts: for Romero, now 38, and her son, Anthony, now 17. Romero eventually grew to nearly 300 pounds, and Anthony became a big baby, a chubby toddler and an obese adolescent.

This mother-child pair is not unique. The obesity tsunami that has washed across the United States over the past four decades swept up pregnant women and their offspring, too. In fact, pregnant women today are considered by some medical authorities to be at the nexus of the obesity crisis. Abundant research has revealed that pregnancy is a key period of increased risk for developing obesity in women and that obesity in pregnancy may genetically “program” offspring to become overweight or obese later in life.

Mounting evidence shows that obesity in pregnancy can have long-term repercussions on both mother and baby. An estimated 9 percent of babies are born macrosomic, weight considered too large for their gestational age. Fetal macrosomia is typically defined as a birth weight of more than 9 pounds 15 ounces (4,500 grams), regardless of gestational age.

However, obesity in pregnancy can also result in babies who are born prematurely or underweight. These infants, too, seem to have a predisposition to obesity and obesity-related diseases, such as diabetes and heart disease, later in life, Dr. Devaskar explains.

More than three decades ago, David Barker, MD, a British physician and epidemiologist, discovered a link between low birth weight and the risk of developing cardiovascular disease later in life. Later, Dr. Barker linked birth weight, whether excessively high or low, to a heightened risk of heart disease, type 2 diabetes and obesity in offspring. In what became known as the Barker hypothesis, he posited that these diseases had their roots, at least in part, to under- or over-nutrition during pregnancy. If a pregnant woman is under-nourished, her infant is prone to low birth weight with a later, rapid “catch-up” gain in body fat when exposed to plentiful food. If a pregnant woman is over-nourished, her infant is prone to high birth weight and a booming growth trajectory that increases the risk of obesity later in life.

The amount of nutrients provided to a developing fetus, as well as the type of nutrients, appears to chemically modify genes that predispose a child to obesity and obesity-related diseases, says Dr. Devaskar, whose own research on the subject resulted in her election to the prestigious Institute of Medicine in 2012. Her current research focuses on whether or not it’s possible to further modify those genes to reverse the propensity to gain weight. “In the fetus, the organs are still developing,” she explains. “It’s a critical window of development, and it’s very plastic at that time. Any insult — whether it’s from diet or drugs or toxins — creates a permanent mark that lasts for one’s lifetime. The hypothalamus (the part of the brain governing metabolism and hunger) is already programmed. The infant is used to seeing so much nutrition coming from the mother. These children are ever-hungry; they are low birth weight with a later, rapid “catch-up” gain in body fat when exposed to plentiful food. If a pregnant woman is over-nourished, her infant is prone to high birth weight and a booming growth trajectory that increases the risk of obesity later in life. The amount of nutrients provided to a developing fetus, as well as the type of nutrients, appears to chemically modify genes that predispose a child to obesity and obesity-related diseases, says Dr. Devaskar, whose own research on the subject resulted in her election to the prestigious Institute of Medicine in 2012. Her current research focuses on whether or not it’s possible to further modify those genes to reverse the propensity to gain weight. “In the fetus, the organs are still developing,” she explains. “It’s a critical window of development, and it’s very plastic at that time. Any insult — whether it’s from diet or drugs or toxins — creates a permanent mark that lasts for one’s lifetime. The hypothalamus (the part of the brain governing metabolism and hunger) is already programmed. The infant is used to seeing so much nutrition coming from the mother. These children are ever-hungry; they are
“Something as simple as performing an ultrasound examination to look at a baby’s anatomy becomes much more difficult if the mother is overweight or obese.”

IN 2009, THE INSTITUTE OF MEDICINE ISSUED REVOLUTIONARY new guidelines to begin to address obesity in pregnancy — the first revision to the recommendations in two decades. The group put tighter limits on weight gain in pregnancy, warning doctors to help their patients stay within a healthy range and even strictly limit weight gain in women who are already obese to 11-to-20 pounds.

“It’s a major change,” says Aisling Murphy, MD (FEL ’11), assistant professor in the Division of Maternal-Fetal Medicine. “More recent data have suggested that obese women really don’t need to be gaining as much weight as women who enter pregnancy at a normal weight. Obstetricians are aware of this, and we’re all doing our best to counsel patients about the importance of these recommendations.”

Moreover, the group, citing numerous studies, issued advice encouraging pregnant women to exercise — something many women had been fearful of doing. “Sometimes, women are under the impression that they shouldn’t be walking or going to the gym when they are pregnant. That is not the case,” Dr. Murphy says. “They really should be active. If a woman has been sedentary, we use this opportunity to have her start doing a little bit of exercise — as much as she can tolerate.”

For obstetricians, addressing body weight and physical activity during pregnancy has both risks and rewards. It can be difficult to broach the subject of weight with an obese patient, Dr. Murphy notes. Yet, at the same time, pregnant women want to bring healthy children into the world and are typically highly motivated to adopt lifestyle changes. “Pregnancy is a great opportunity to address the issue of weight with patients,” she says. “Sometimes it’s a difficult discussion, to have to tell someone they have to watch their weight. But in pregnancy, women have the added motivation of their baby’s health and the potential impact weight gain may have on their child.”

In addition to the risk of fetal programming, obesity during pregnancy is linked to several other potential complications. The chances of developing both hypertension and gestational diabetes are higher in pregnant women who are obese. Studies show women who develop gestational diabetes have an increased likelihood of developing type 2 diabetes later in life. In essence, gestational diabetes often isn’t a “temporary” condition that goes away after childbirth.

About 7 percent of pregnant women in the United States develop gestational diabetes, which comes out to about 200,000 cases annually. “When patients arrive for their first prenatal visit and they are obese, we tend to be more proactive in screening for pre-existing diabetes or pre-diabetes,” Dr. Murphy says. “There is an increased awareness that this problem is extremely common.”

Obesity during pregnancy also raises the risk of some types of birth defects and other complications, such as an increased risk of Cesarean section or complications during childbirth, she notes. “Something as simple as performing an ultrasound examination to look at a baby’s anatomy becomes much more difficult if the mother is overweight or obese.”

VERONICA ROMERO HAS STRUGGLED TO LET GO of the feeling that she was somehow responsible for Anthony’s weight problems. “I come from a family where my dad is big-boned, my cousins and uncle are big-boned; I think it’s genetic for us,” she says. “But sometimes I feel guilty. I ask myself, ‘Did I eat too much when I was pregnant?’ I blame myself. So now I support Anthony 100 percent.”

Two decades ago, few pregnant women were given the extra resources and support they needed to manage weight gain. But that has changed, Dr. Murphy says. Overweight or obese women who are planning to have a child are encouraged to seek pre-conception counseling, where they are given advice and resources to help them lose weight before becoming pregnant. “If we can take care of young women before pregnancy and during pregnancy, we will end up with a healthier society, and it will bring down healthcare costs dramatically,” Dr. Devaskar says.

Meanwhile, pregnant women who are obese now are typically referred to a registered dietician for assistance with a healthy diet. Breastfeeding for
at least six months is highly recommended to help the mother lose weight. For the baby, breast milk is considered healthier than formula, which can cause rapid weight gain in infants.

“Breastfeeding has been shown to decrease inflammation,” Dr. Devaskar says. “Obesity is considered an inflammatory syndrome. Breast milk helps counteract obesity.”

Physicians also have changed their approach to managing babies born to overweight and obese mothers, says Alma Guerrero, MD ’03 (RES ’06), assistant clinical professor of pediatrics. Pediatricians have always kept a close eye on infancy. You don’t want to wait until a child is 2 years old to address weight status. Weight is something I’m monitoring at every visit.”

Pediatricians offer new parents advice about how to gauge an infant’s hunger cues and when to start solid foods. Children who are gaining too much weight may need more help, such as the assistance provided at UCLA’s Fit for Health Program. The clinic provides comprehensive and structured services aimed at childhood obesity.

Involving the entire family in lifestyle changes, such as engaging in more exercise and adopting a healthier diet, is a highly successful strategy, Dr. Guerrero says. “One of the things I learned when I was a medical student and interviewed moms is how important this notion of family cohesion is in supporting behavioral changes,” she notes. “It’s very common for a father or grandmother to not be supportive or to undermine behavioral changes that one parent may want to try to implement at home.”

Veronica Romero is an example of making a healthy lifestyle a family affair. She has lost 150 pounds since undergoing gastric-bypass surgery at UCLA three years ago. Anthony is now enrolled in UCLA’s Fit clinic. He is losing weight and will apply to undergo bariatric surgery next year. “I am so excited to see him so happy; he has never lost weight before this,” Romero says. “At the Fit clinic, they motivate him. He gets weighed and measured. They give him a list of what to eat during the week, and he gives them a record of what he’s eating. He goes to the gym three times a week for two hours, plus he walks around the neighborhood.”

Romero and her two children try to turn off the television during dinner to focus on healthy eating. Then they take the dog out for walks together. “It does help if we’re all working on it together,” she says. “I told Anthony, ‘If you want to walk, I’ll walk with you.’ I always do everything with him, because I understand what he’s going through.”

Shari Roan wrote about healthcare and medicine as a staff writer for the Los Angeles Times.
Dr. Jam
By Marina Dundjerski

In 1972, Dr. Hook memorably sang of its yearning to get on the cover of Rolling Stone: “... the thrill we’ve never known/is the thrill that’ll getcha/when you get your picture/on the cover of the Rollin’ Stone!” More than 40 years later, another doctor — a real one this time, Jason Roostaeian, MD ’06 (RES ’10, ’12, FEL ’14) — harbors similar, and perhaps more elevated, ambitions.

Sure, RS would be great, but Dr. Roostaeian, a UCLA aesthetic and microvascular plastic surgeon, would prefer to land on the cover of The New England Journal of Medicine. Though, after a thoughtful pause to further ponder the choices, the bass-playing physician acknowledges: “That’s a tough one.”

In either case, Dr. Roostaeian could be the poster child for living one’s passions in life. His love of music and surgery each fuel the other, he says. And when he’s not shredding the bass and throttling a microphone, he finds time as often as possible to ride the waves in Malibu. “I definitely pursue my passions,” he says. “It has to do with your overall well-being and happiness. When you’re in a good place, it helps you to be more productive with everything in life.”

In pursuit of that balance, Dr. Roostaeian and three fellow surgeons formed an indie rock band, Help the Doctor, during their training at UCLA. With its driving, catchy melodies and versatile rhythms reminiscent of such bands as Weezer and Death Cab for Cutie, Help the Doctor has cultivated a loyal following, with a sold-out debut at the Troubadour in West Hollywood and jam-packed gigs along the Sunset Strip at The Roxy, the Viper Room and the House of Blues. Recently, the band recorded its first EP with Grammy Award-winning producer Chris Testa (The Dixie Chicks, Jimmy Eat World) and plans to lay down another this winter.

The sweaty appreciation of enthusiastic fans is great, and making each show a fun experience for the crowd has its rewards, but staying grounded also is important. Dr. Roostaeian (who began performing under the nom de guerre Jay Roost but now takes the stage with his real name) and the other members of Help the Doctor — all of whom practice outside of UCLA: plastic surgeons Phuong Nguyen, MD (RES ’14), on lead vocals and guitar and Robert Kang, MD (FEL ’12), on guitar, keyboards and vocals, and maxillofacial surgeon Solomon Poyourow, MD ’10 (RES ’13, DDS ’07), on drums — donate the band’s profits to children’s facial-reconstructive charities, such as Facing Forward and Operation Smile.

“Being able to create music together is the fun part, but having the opportunity to help raise money for charities has made it truly special for us,” Dr. Roostaeian says.

As a surgeon at UCLA, Dr. Roostaeian has stayed close to home. He grew up in Westwood and Brentwood, attended what is now the UCLA Laboratory School and as a teen heard Nirvana and Guns N’ Roses play in Pauley Pavilion. “UCLA definitely was my playground,” he says. He taught himself to play bass in junior high school after he mistakenly bought one through a local classified that advertised it as a guitar, and he had ambitions of working in the music industry. While an undergrad at UCLA, from which he graduated summa cum laude in 2002 with a degree in economics, he interned at the Santa Monica-based label Mojo Records. But the advent of digital music and other changes to the music world made the industry less appealing as a career path; he opted instead for medical school.

His mother was instrumental in Dr. Roostaeian’s choice to pursue plastic surgery. A pediatric nurse at
UCLA, Nancy Roostaeian was assisting in the care of Guatemalan conjoined twins who were separated at UCLA in 2002, and she introduced her son to several of the plastic surgeons working on the case. “It was an epiphany for me,” Dr. Roostaeian says. “In plastic surgery, you are creating; it melds both science and art. It really was the perfect fit for me.”

As a medical student, Dr. Roostaeian was a standout. He earned the prestigious UC Regents Scholarship and received the Longmire Medal, which is awarded to the top-graduating student in surgery. After completing his residency training at UCLA, he spent a year at the University of Texas Southwestern Medical Center in Dallas, where he pursued an additional specialization in advanced aesthetic surgery. He returned to UCLA to complete a fellowship in microvascular surgery.

“With facial aesthetic surgery, it is an art to achieve a balance between what needs to be accomplished and what the doctor and patient think is beautiful,” he says. And being good at aesthetic surgery dovetails with the technical aspects of being a good reconstructive surgeon, he says. “Sometimes you are forced to push the envelope because, for example, cancer took something away, and you have to be a little more creative about how to restore what was lost.”

His fellow band members say it’s no surprise that Dr. Roostaeian is an expert at both. “There’s a reason why Jason is good at playing bass and guitar and at performing surgery,” says bandmate Dr. Nguyen. “There’s a lot of similarity between playing music and the manual dexterity involved in surgery. And he is technically gifted. He has an ability to make his fingers move and do what his mind tells them to do.”

But as much fun as it is to swap his scrubs for T-shirts and blue jeans, play music and perform, Dr. Roostaeian puts being a doctor first. The musical outlet is a way to keep him centered and focused on having a positive impact on their lives. Creating music is a passion of mine that I always have had, and I am just happy to be able to continue it, especially with such a great group of guys and for charity. It really doesn’t get any better.”

Freelance writer Marina Dundjerski rocks the Westside from her home in Los Angeles.
Fountain of Youth

Henry H. Chan, MD ’89 (RES ’93), JD, attended UCLA on a UC Regents Scholarship for both his undergraduate and medical-school education. After completing his residency in anesthesiology, he joined the Permanente Medical Group in 1993. From 2002 to 2006, while working more than 100 hours per week in his clinical practice, he attended Laurence Drivon School of Law at Humphreys College in Stockton, California, at night and graduated as the class valedictorian. At the age of 44, he then successfully passed the California Bar exam on the first attempt and was admitted to the State Bar of California in December 2006. In 2013, Dr. Chang served as chair of the Class of 1989 25th Reunion.

Humankind has been searching for a fountain of youth for millennia, but it just might be closer than you think. Let’s take a pause and think for a moment. According to a *National Geographic* video, “Stress, Portrait of a Killer,” stress can cause hypertension, dementia and premature death. Obviously, no one can avoid stress completely in modern life. In actuality, a certain level of stress is essential for normal daily functioning. However, excessive stress is linked to overeating, insomnia, hyperlipidemia, diabetes and myriad other health problems. So instead of pounding the table or yelling at your loved ones, take a deep breath and a quick five-second “mental vacation,” and you can make the rest of your life much more bearable. If time permits, go out for a quick run, or take a few days off for a much needed vacation, which can do your body and mind more good than popping yet another Ativan.

If stress can kill, so can isolation. In a study I read long ago, monkeys would prefer the company of other monkeys over food and water. It is a well-known fact that married people tend to be happier and live longer than singles. This phenomenon is especially seen around the holiday season in emergency departments all over the country, when the rate of suicide increases exponentially during a time when family and friends traditionally gather for celebration. Therefore, being well-connected to friends and family is a must in bringing happiness and a sense of youthfulness to an individual.

Recently, I participated on my medical school’s 25th-reunion organizing committee, and at first I was a bit embarrassed to make cold calls to my classmates’ homes or offices to ask for their e-mails to receive updates of the event. The end result of our effort was that we had a historic turnout at the reunion. Although the attendees are now all seasoned physicians in their early 50s, somehow we talked, ate and socialized as if we were back to being first-year medical students. For a while, I really felt like I was 25 years younger.

Our intellectual mind performs similarly to our muscles: The more you use it, the stronger it becomes. I am not suggesting that everyone should pursue one advanced degree after another,
but it is imperative to keep an active mind. Higher learning will not only keep the brain engaged to its optimum, it also gives the person a sense of accomplishment that no monetary reward can provide. On the other hand, a lethargic mind is doomed to waste away, as would a piece of atrophied muscle following prolonged bed rest.

If I can be happy, connected with friends and family and constantly gaining new knowledge, I can feel young forever. Now I have yet another reunion to plan!

Class Reunion Committees Forming

Renew and reconnect! Since 2013, UCLA Medical Alumni Association members have formed committees to plan their class reunions. The approach has been very successful and also fun for committee members. Reach out today to help plan your reunion by contacting Valerie Walker at vwalker@support.ucla.edu or (310) 794-4025.
In His Own Words: Erno S. Daniel, MD ’75 (RES ’78), PhD

After completing his residency in medicine, Erno S. Daniel, MD ’75 (RES ’78), PhD, became one of the first physicians in the United States to receive certification of added qualifications in geriatrics. His interest in the topic of how diagnoses are made or missed, especially in the area of hidden infections, led him to write both for scientific medical journals and for public readership. He practices full-time at the Sansum Clinic in Santa Barbara, California, where he also writes about the history of California medicine pertaining to the region of Santa Barbara.

medical history in Santa Barbara, with the help of my wife, Martha Peaslee Daniel, RN, whom I met at UCLA.

I became increasingly interested in the issue of how diagnoses are made or missed and how to improve accuracy. I took a special interest in “stealth” infections, such as H. pylori and HPV, whose role in morbidity and mortality was overlooked and misdiagnosed for most of the 20th century. Realizing there may be many other such infections, I wrote the book Stealth Germs in Your Body for general readership in 2008. The book begins with the story of six patients I treated who were diagnosed with irritable bowel syndrome, ulcerative colitis, chronic fatigue, sensitive stomach, eczema and symptomatic endometriosis. Each patient turned out to have an underlying infectious condition that was treated, causing resolution of their long-standing symptoms.

Continuing in full-time practice, I enjoy the challenge of being a diagnostician, evaluating complex cases and finding remedies for some patients who were told they had incurable chronic conditions.

It meant a great deal to me to return to the UCLA campus in September 2014 as a guest lecturer on “How Diagnoses Are Made or Missed and the Challenge of Stealth Germs.” The UCLA Medical Alumni Association sponsored the event as part of its Speakers Series.

To read more about Dr. Daniel’s research, visit: stealthgerms.com

After seven great years of medical school and internal-medicine residency at UCLA, I entered practice at Sansum Clinic in Santa Barbara. With a strong academic background — I earned my bachelor’s degree from the California Institute of Technology and my PhD in magnetic resonance imaging from UC San Diego — I continued writing and teaching. With the support of the late Dr. David H. Solomon, I was one of the first physicians in the U.S. to be certified in geriatric medicine. I also was credentialed in vascular ultrasound and was lead author of a landmark article on the Cronkhite-Canada syndrome with the late Dr. Arthur Schwabe, former chief of the Division of Gastroenterology at UCLA.

Once in Santa Barbara, I published on geriatric topics including Alzheimer’s disease, produced the Senior Forum cable-TV program, was medical columnist for the Santa Barbara News Press, directed long-term care facilities and taught geriatric medicine to thousands of colleagues via continuing medical education programs in the U.S. and abroad and as an attending physician in Saudi Arabia. I wrote about
A Tale of Two Brothers

Brothers Vincent F. Honrubia, MD ’90, and Dynio Honrubia, MD ’96 (RES ’99), are in South Texas pursuing medical careers in otolaryngology and neonatology. Extremely passionate healthcare providers, the brothers felt the Rio Grande Valley was an area in need of quality healthcare services. The medical education and training they received at UCLA — where their father, Vicente Honrubia, MD, DMSc, was professor of ear, nose and throat surgery and recipient of the UCLA Medical Alumni Association 2007 Award of Extraordinary Merit — provided them with skills to increase the caliber of patient care in the place they now call home. Dr. Vincent Honrubia practices otolaryngology and was instrumental in founding Doctors Hospital at Renaissance (DHR), while Dr. Dynio Honrubia practices neonatology and was involved in the establishment of Women’s Hospital at Renaissance (WHR).

Dr. Vincent Honrubia is leading otolaryngologist at the South Texas Sinus Institute in Edinburg, Texas. He moved to Texas in 1995, after completing his residency training in Chicago. His brother, Dr. Dynio Honrubia, is medical director of the neonatal intensive care unit at WHR in Edinburg. He joined his brother in the Rio Grande Valley in 2007, after having taught at UCLA from 2002 to 2005.

For decades, the Rio Grande Valley, with more than 1.2-million residents, was among the most underserved areas in the nation. In addition to lacking some of the most basic healthcare services, there was limited availability to medical specialties such as otolaryngology. “I knew I wanted to address those needs with the latest technology available in a high-quality facility,” Dr. Vincent Honrubia says. “The motivation behind establishing DHR was that the other hospitals in this area were providing inadequate healthcare services for the community. We had hospital corporations from out-of-state dictating what type of care we should provide and on which equipment. They were not in touch with the community and its needs.” For the residents of the community, “It is important that DHR is a physician-owned hospital and locally owned,” he says.

For Dr. Dynio Honrubia, “The main reason I moved to the Rio Grande Valley was to fundamentally change the way newborn medicine was practiced and regarded in this region and the state of Texas.” For example, the percentage of mothers who breastfed their infants was the lowest in the U.S. due to lack of education. In addition, there was little attention paid to mortality and morbidity rates among the area’s newborns, Dr. Dynio Honrubia says. “Our team did not take this lightly, and we began to make it our goal to not only track the numbers, but also raise the quality of healthcare for these newborns. I knew that the lack of accountability in this area of medicine had to change, and I am very proud to say that it has over the past seven years,” he says.

Through the efforts of the Honrubia brothers, the residents of the Rio Grande Valley now have access to such specialized services as endoscopic and telescopic sinus surgery — neither of which was previously available. “We look forward to the continued growth of Doctors Hospital and Women’s Hospital at Renaissance and to always offering increased healthcare access while providing quality medical services to our patients,” Dr. Vincent Honrubia says. “It is all about innovation, improving quality of care, being sensitive to what the community needs and providing that care.”

Top: Dr. Dynio Honrubia examines a newborn — his daughter, Noa — at the Women’s Hospital at Renaissance NICU.
Photo: Dr. Jyothi Swarup

Bottom: Dr. Vincent Honrubia performs balloon sinuplasty, turbinate reduction and septuplasty on a patient at the South Texas Sinus Institute in Edinburg, Texas.
Photo: Gerardo Garmendia
A bequest from the Irma and Norman Switzer estate has created a new fund to advance medicine and health. The unrestricted gift of $50 million to the David Geffen School of Medicine at UCLA from the estate of Irma and Norman Switzer was announced November 12, 2014, at a gathering of their friends and family, UCLA leadership, faculty, staff members, students and the school’s Board of Visitors.

“This exceptionally generous gift is an enduring legacy of two people who clearly cared about the future of medicine and science,” said UCLA Chancellor Gene D. Block. “The university is honored to be the steward of such a transformative bequest.” As a tribute to the couple, the UCLA Center for Health Sciences Plaza, where the announcement was made, was renamed the Irma and Norman Switzer Plaza.

“The Switzers’ extraordinary gift will immediately strengthen the work of our faculty and eventually benefit countless patients,” said Dr. A. Eugene Washington, vice chancellor of UCLA Health Sciences, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, MD, Endowed Chair.
Norman Switzer passed away in 2011 at the age of 84, and his wife Irma died in 2013 at the age of 93. Longtime residents of Pacific Palisades, California, the couple lived quiet, modest lives. A veteran of the Korean War, Norman Switzer devised the concept of adding benches to bus stops throughout Los Angeles. In exchange for funding the bus benches, the city awarded his company, Norman Bench Advertising, a 20-year exclusive on advertising. The bus-bench advertisements became known in the industry as “Norman Bench Ads.” He later sold the business and became a real-estate investor. Irma Switzer, an accomplished weaver and member of the Palisades Weavers group, physically built three homes in Manhattan Beach with a friend. The couple was involved with the Fowler Museum at UCLA and the Natural History Museum of Los Angeles County.

Dr. Norman Kumai, a friend of the Switzers who spoke at the gathering, said that Norman liked to invest in people who knew how to fix things, which is the “heart of medicine — repairing people and making discoveries — and by giving to UCLA, he was giving to the guys who ‘fix stuff.’ ”

“The Switzers, who were very humble people, would be gratified to know that the proceeds from their estate are going to advance medicine and health in such a profound way and that this beautiful plaza, through which so many patients, physicians, scientists and students pass on a daily basis, will bear their names,” said Theodore Wolfberg, the Switzers’ attorney and friend.

According to Arlynne Siegel, managing director and Los Angeles regional director of the Personal Trust Department of MUFG Union Bank and Trustee of the Switzers’ Trust, the Switzers’ generosity manifested in many ways, and UCLA’s recognition of their remarkable philanthropy would be the highest honor they could have imagined.

The bequest will count toward The Centennial Campaign for UCLA, a $4.2-billion fundraising campaign, formally launched in May 2014 to commemorate the university’s 100th year.

“The forethought the Switzers demonstrated by including UCLA Health Sciences in their estate plans illustrates the generosity that is their legacy,” said Kathryn Carrico, assistant vice chancellor, UCLA Health Sciences Development.
On August 13, 2014, a small group of faculty and staff gathered in the Dr. S. Jerome and Judith D. Tamkin Auditorium in Ronald Reagan UCLA Medical Center to enjoy a rare, private performance by world-renowned cellist Yo-Yo Ma. Made possible by liver- and heart-transplant patient Diann Kim and her husband John Frank, the invitation-only event honored the physicians and staff responsible for her care. David T. Feinberg, MD (RES ’92, FEL ’94), MBA, president of UCLA Health System, welcomed the guests. “Tonight is about kindness, about one patient saying thank you to us,” he said. He asked all those who had cared for Kim to stand, and he recognized their contributions. “In reality, we could probably fill about four auditoriums if we gathered everybody who made it happen for Diann to get the care she received,” he added.

Kim then shared her story. “In January 2009, Dr. Ronald Busuttil performed a liver transplant and saved my life,” she said. “Last November, Dr. Abbas Ardehali performed a heart transplant, and my life was saved again. And here I am, ever so grateful to my wonderful doctors and their transplant teams. I look at all of you, and you represent so many kindnesses.” Kim spoke of her moment of despair when it did not seem as if they would find a heart donor and of the many things the physicians and staff did to improve her extended stay in the hospital. She then introduced Yo-Yo Ma and closed her remarks by telling the audience, “Please know that you are the heroes of my new life.”

The respected cellist, who said he was honored to be at the event and thanked the audience for the “miracles,” performed four pieces tailored to the evening. He began with “Appalachia Waltz,” which he said was transnational and reflected the cultural diversity of the healthcare team. That was followed by a composition that was his interpretation of the frenetic pace of the environment. He shared that his final two selections, a Sarabande followed by a Gigue, both by Bach, could be played for sad and happy occasions, to celebrate or reflectively remember something.

Dr. Feinberg and Dr. Busuttil (RES ’77), director of the Dumont-UCLA Liver Transplant Center and the William P. Longmire, Jr. Chair in Surgery, offered closing remarks, which included presenting Kim with a gift — the naming in her honor of the room where she stayed for 92 days while waiting for a heart to become available for transplantation in the 7 North Cardiac Observation Unit at Ronald Reagan UCLA Medical Center. The concert was preceded and followed by a reception.

In addition to Drs. Feinberg and Busuttil, attendees included Dr. Ardehali (RES ’95, ’97), who specializes in thoracic and cardiac-transplant surgery; Kim’s clinical-care team and staff; and UCLA Health staff. Kim and Frank, in addition to hosting the very special celebration, are generous supporters of the UCLA Health Sciences.
A Step and a Wave to Raise Funds for Operation Mend 25 Cents at a Time

**Ric Ryan began with a quest:** to walk every day in the hope of escaping his demons from combat in Vietnam. Then he added a twist. Each time someone waved to him as he passed, he would respond with a wave and donate 25 cents to UCLA Operation Mend, a program that provides medical and psychological services to soldiers disfigured by war in Iraq and Afghanistan, which he learned about from a story he saw on television. Ryan’s wife says his regular walks and generosity help him mentally, physically and emotionally to cope with his own war experience, while helping the wounded from the latest wars.

The people in the rural California Gold Country town of Murphys, population 3,000, where Ryan and his wife live, took notice, and soon they began to open their own wallets. What began as a trickle of donations became a flood — some people gave him hundreds of dollars at a time, and one wrote a check for $2,500 — and in three years, Ryan, a retired ironworker who wears braces on both legs and carries a hiking pole in one hand on his daily nine-mile walks, has waved more than 30,000 times and raised more than $48,000 in contributions and donated another $19,000 himself.

This past Veterans Day, the 68-year-old Marine Corps vet known as the Walking Man of Murphys took another walk, this time down Fifth Avenue in New York City with the Operation Mend team in the America’s Parade — the oldest and largest event in the United States to honor veterans.

Operation Mend surprised Ryan with an invitation to join the group — which included patients, surgeons, caregivers, friends and family — in the parade. “I was totally taken aback when they asked my wife and me to come with them to New York,” says Ryan. “I was overwhelmed by the experience. Walking with those veterans who have been helped by the program — that was the greatest thing. I felt truly honored to walk with them.”

Ryan’s efforts demonstrate the power of one person’s commitment to help a cause in which he or she believes. “Ric Ryan mesmerizes me,” said philanthropist Ronald Katz, whose million-dollar contribution helped to launch Operation Mend, in an article about the Walking Man of Murphys that ran in the *Los Angeles Times*. “He’s one man walking, without even a sign, just a passion to help this enormous cadre of wounded soldiers. The money he gives is an extraordinary contribution of hope.”

To view a video about Ric Ryan and his Veterans Day walk in New York City, go to: [uclahealth.org/walkingman](http://uclahealth.org/walkingman)

For more information about UCLA Operation Mend, go to: [operationmend.ucla.edu](http://operationmend.ucla.edu)

Ric Ryan, the Walking Man of Murphys, enjoys the moment as he walks with UCLA Operation Mend in the Veterans Day Parade in New York City.

*Photo: Julie Davis for UCLA Health*
During a festive October 28, 2014, ceremony, campus officials dedicated a new research and patient-care facility in UCLA’s Stein Plaza. Named to honor the late philanthropists Edie and Lew Wasserman, whose generosity made the striking structure possible, the Edie & Lew Wasserman Building is a state-of-the-art facility that will meet the expanding needs of Stein Eye Institute and provide transformative space for UCLA’s Department of Neurosurgery and the Institute of Urologic Oncology (IUO).

“This world-class complex culminates years of planning to ensure the effective use of several exceptionally generous gifts to benefit the public,” said UCLA Chancellor Gene D. Block. “It is an enduring legacy of Edie and Lew Wasserman, who were among UCLA’s most ardent enthusiasts. They gave selflessly not only to enhance vision care, but also to establish undergraduate-student scholarships in the UCLA College and graduate-student fellowships in film production, among other gifts.”

“We’re here to celebrate the future,” announced Dr. A. Eugene Washington, vice chancellor of UCLA Health Sciences, dean of the David Geffen School of Medicine at UCLA and Gerald S. Levey, MD, Endowed Chair. “The Edie & Lew Wasserman Building is a beautiful symbol of UCLA’s collaborative spirit and global impact.”

Designed by Richard Meier & Partners Architects, the $115.6-million project is an LEED gold-certified green building with six floors. Its 100,000 square feet is a stunning example of modern architecture, dominated by white terracotta, clean lines and pale oak. Three stories of glass flood the main lobby with light and a relief of two pairs of oversized spectacles — inspired by the Wassermans’ signature eyewear and an homage to the couple’s vision and long-standing commitment to preventing blindness and restoring sight — watch over the space.

The initial vision of the institute had its roots in the 1960s, when Lew Wasserman, Jules Stein and then-UCLA Chancellor Franklin Murphy imagined a trio of facilities dedicated to restoring and preserving eyesight. The first building, the Jules Stein Eye Institute, opened its doors in 1966, and in 1989, Stein Plaza expanded with the creation of the Doris Stein Eye Research Center.

Three floors of the Wasserman Building are dedicated to Stein Eye Institute. The new center features six lower-level operating rooms; the Division of Orbital and Ophthalmic Plastic Surgery is on the first floor; the Division of Cataract and Refractive Surgery is on the second floor. Each practice area includes procedure space and clinics, enabling physicians to perform patient exams, testing and surgery in a single location. By moving its surgical-center site to the Wasserman Building, Stein Eye will be able to expand the lab space in the Jules Stein Building required for cutting-edge research, such as gene and stem-cell therapy, for treating eye disease.

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The UCLA IUO, on the third floor, is led by a multidisciplinary team of scientists and physicians dedicated to expediting the development of new therapies for the treatment of kidney, bladder, testicular and prostate cancers. Patients will benefit from the IUO’s collaborative approach, top diagnostic tools, expertise in
robotic surgery and the combined experience of UCLA experts who often treat the most complicated urologic-cancer cases. A board representing all genitourinary specialties meets at the IUO to discuss complicated and challenging tumor cases referred to UCLA.

The Wasserman Building’s innovative philosophy continues on the top two floors, where the UCLA Global Neurosurgery Center unites the Department of Neurosurgery, which was previously spread among eight buildings. The center also features a telemedicine command center that allows surgeons to continuously monitor patients in Ronald Reagan UCLA Medical Center, UCLA Medical Center, Santa Monica and community hospitals across California.

A new clinic includes collaboration spaces for multidisciplinary teams of physicians and the Steve Tisch Patient Care Suite, a unit with six exam rooms and two consultation suites. The 70-seat Charles and Peggy Norris Global Conference Room with extra-large viewing screens will allow experts worldwide to pool their knowledge and accelerate surgical solutions for patients. A simulation center will enable surgeons and trainees to download patients’ brain-anatomy images to rehearse complex cases before entering the operating room. The virtual-reality environment will give surgeons the ability to select instruments, choose the best entry points and identify complicating factors in order to reduce medical risks and ensure successful results.

Approximately 120 people attended the dedication. Casey Wasserman, the Wassermans’ grandson, recalled that he was a UCLA senior when he attended his first architectural meeting about the Wasserman Building with his grandfather in 1996. Eighteen years later, he joined the building’s opening celebration with his wife and children.

Party On (the Pier)!

The 15th Annual Mattel Party on the Pier to benefit Mattel Children’s Hospital UCLA took place on the Santa Monica Pier on October 5, 2014. Nearly 2,000 guests, including pediatric patients and their families, filled Pacific Park to enjoy unlimited amusement-park rides and carnival games stocked with a wide variety of toys donated by title sponsor Mattel, Inc. Actress Sarah Michelle Gellar served as host of the event and was joined by many young celebrities from popular children’s television shows who signed autographs and volunteered in the game booths. The event also included on-site and online silent auctions, arts and crafts and music. Sponsors and VIP ticket holders escaped the heat in the Los Angeles Dodgers Foundation VIP Area, where they enjoyed cuisine generously provided by Wolfgang Puck Catering.

This year’s event, chaired by Mattel Children’s Hospital UCLA Board member Liz Greenspan, was the largest and most successful to date. More than $830,000 was raised to support the hospital’s highest-priority programs and innovative discoveries that benefit children. Recent funding has supported inflammatory bowel disease and gene-therapy programs, research on autism-associated epilepsy and treatments for children who have undergone chemotherapy and bone-marrow transplants.
On September 27, 2014, the UCLA Department of Neurology celebrated the 15-year anniversary of Art of the Brain with a gala at UCLA Schoenberg Hall. Founded and hosted by brain-cancer survivor Judi Kaufman, Art of the Brain celebrates brain-cancer patients and pays tribute to those who have succumbed to the disease. This year’s event, themed “The Art of Survival: Honoring Our First Responders,” raised more than $400,000 to support the UCLA Neuro-Oncology program under the direction of Dr. Timothy Cloughesy (RES ‘91, FEL ‘92).

Dr. John C. Mazziotta (RES ‘81, FEL ‘83), chair of the UCLA Department of Neurology, the Frances Stark Chair in Neurology, vice dean of the David Geffen School of Medicine at UCLA and UCLA associate vice chancellor, presented Kaufman with a milestone-achievement award to thank her for founding the event and to honor her 15 dedicated years of hosting the fundraiser.

Dr. William Yong (MD ‘91, FEL ‘98) received the Johnny Mercer Foundation Research Award, which honors a physician-scientist who has made notable contributions to brain-cancer research. Brain-cancer survivor Craig Newland was honored with the Judi Kaufman Founder’s Responsibility Award, given to those who demonstrate a commitment to activities benefiting brain-cancer research and treatments.

This year’s benefit included the inaugural Art of the Brain Art Show, which displayed the artwork of brain-cancer survivors who had been paired with artists to help the survivors capture their life experiences. The evening also included special performances by String Theory, a collaborative ensemble of musicians and dancers, and singer Michael Aurit. Attendees availed themselves of 28 different gourmet food and dessert stands. To date, Art of the Brain has raised more than $6.6 million to help fund brain-cancer research.

Crusading for Brain-cancer Research

Cranium Crusaders, an organization that raises awareness and support for brain-cancer research, held its eighth annual fundraiser in Long Beach, California, on September 18, 2014. The nonprofit was founded by Cris Zavaleta and Cindy Atkinson, who met at UCLA, where their late husbands Hank Zavaleta and Tom Atkinson were being treated for brain cancer. Both men had been diagnosed with glioblastoma multiforme, the most common and most aggressive malignant primary brain tumor. Sadly, the women lost their husbands to the disease, but a friendship and a shared desire to find a cure were born.

To date, the event has raised $450,000. All proceeds from the evening benefit UCLA brain-cancer research and the work of Dr. Timothy Cloughesy (RES ‘91, FEL ‘92), director of UCLA Neuro-Oncology.
Gifts

The People-Animal Connection (PAC) Program at UCLA will benefit from a $100,000 gift made in honor of UCLA benefactor Wallis Annenberg. One of the most comprehensive animal-assisted-therapy and activity programs in the nation, PAC has 70 trained and dedicated volunteer teams (the canine and his/her human partner) who offer companionship to more than 1,000 critically ill children and adults per month. Since its inception in 1994, PAC’s teams have recorded more than 250,000 inpatient visits, as well as hundreds of thousands of unrecorded visits with families and guests at UCLA medical centers and community events.

Gunnar and Evelyne Bjorg have made a contribution to support the Movement Disorder Program in the UCLA Department of Neurology. Their gift will fund the Parkinson’s disease research of Jeff Bronstein, MD/PhD ’88 (RES ’92), director of the Movement Disorder Program, and be used to purchase the equipment necessary for the cross-disciplinary projects that focus on finding the cause and new treatments for Parkinson’s disease.

The Sam and Sooky Goldman Charitable Foundation, Inc. has contributed $100,000 to the UCLA Alzheimer’s and Dementia Care Program to support comprehensive Alzheimer’s and dementia care programs for patients and their families. Under the direction of Dr. David B. Reuben (FEL ’88), chief of the Division of Geriatrics, the program focuses on individualized care plans in an effort to slow further decline in cognition, manage symptoms, and maximize independence and dignity for each patient, as well as minimize caregiving strain for family members.

The Jonsson Cancer Center Foundation has received a gift of $100,000 from the Kenneth Jonsson Family Foundation that continues the Jonsson family’s nearly 50-year legacy of support for cancer research at UCLA. This latest contribution — for the Director’s Leadership Initiative at the Jonsson Comprehensive Cancer Center (JCCC) — provides invaluable discretionary funding for strategic investments in faculty as well as discovery research and next-generation technology, all crucial needs identified by the JCCC academic leadership as top priorities.

The Melanoma Research Alliance (MRA) has awarded a $900,000 Team Science Award to Dr. Roger Lo (RES ’06), a member of the Jonsson Comprehensive Cancer Center with faculty appointments in the UCLA Department of Medicine, Division of Dermatology and the Department of Molecular and Medical Pharmacology; and his collaborator, Dr. Alain Algazi (MD ’04, RES ’05, ’07) in the Division of Hematology/Oncology at the University of California, San Francisco. The MRA award will allow the investigators, under Dr. Lo’s direction, to continue the quest to understand how advanced melanomas develop resistance to drugs and to comprehensively profile both the genetic and non-genetic alterations repeatedly detected in drug-resistant tumors, but not in tumors prior to treatment. The ultimate goal of the research is to develop ways to curtail drug resistance and dramatically extend patient survival.

Charles and Peggy Norris have made a generous philanthropic commitment to the UCLA Department of Neurosurgery to name the Charles and Peggy Norris Global Conference Room in the department’s Global Neurosurgery Center in the new Edie & Lew Wasserman Building. The facility will include technically advanced, internationally connected conferencing capabilities for as many as 70 participants, providing collaborative opportunities for physicians and patients across borders and time zones. Seasoned physicians as well as those in training will be able to enhance their surgical skills through the global knowledge-sharing environment.

The Will Rogers Institute has made two gifts totaling $270,000 to the UCLA Division of Pulmonary and Critical Care Medicine in the David Geffen School of Medicine at UCLA. One gift will support the research fellowship program that trains the next generation of physician-scientist leaders in pulmonary and critical-care medicine. With the second gift, the Will Rogers Institute continues its long-term partnership with Dr. Thomas Ganz (MD ’78, RES ’81, FEL ’83), whose groundbreaking research has revolutionized the field of iron biology and has transformed the way scientists and clinicians study and treat iron and anemia-related diseases.

In Memoriam

Joseph K. Perloff, MD, founding director of the Ahmanson/UCLA Adult Congenital Heart Disease Center, passed away on August 18, 2014. He was 89 years old. Dr. Perloff, who served in the U.S. Navy during World War II, joined the UCLA faculty in 1977 and was the inaugural Stressis/American Heart Association Professor of Medicine and Pediatrics. He founded a new medical subspecialty — congenital heart disease in adults — and established a center at UCLA in 1980 to treat the disease. The first of its kind in the country, the center earned an international reputation for excellence and received a significant endowment from The Ahmanson Foundation.

Pioneering heart surgeon James Vincent Maloney, Jr., MD, died on August 18, 2014. He was 89 years old. Noted for performing the first successful open-heart surgery west of the Mississippi in 1956, at UCLA, he arrived as the first chief of thoracic surgery at UCLA, which marked the official establishment of the UCLA Division of Cardiothoracic Surgery.

He also served as chairman of the UCLA Department of Surgery from 1976 to 1981. Following his retirement from clinical work, Dr. Maloney developed and patented a new heart-bypass machine.

Andrea L. Rich, PhD, a former UCLA professor and executive vice chancellor, died on July 28, 2014. She was 71 years old. Dr. Rich received BA, MA and PhD degrees from UCLA. She took a position as assistant professor in the speech department in 1968 and was appointed as executive vice chancellor in 1991. During nearly 30 years of service to UCLA, Dr. Rich promoted teaching excellence and was instrumental in restructuring UCLA’s professional schools and academic programs to enrich academic quality. She led the reorganization of what are now Ronald Reagan UCLA Medical Center and the David Geffen School of Medicine at UCLA into an integrated medical enterprise. Dr. Rich received a number of awards, including The UCLA Medal, the university’s highest honor. She left UCLA in 1995 to take the position of president and chief executive officer of the Los Angeles County Museum of Art.
which I grew up, the 1950s and ’60s, were an era when your mom told you to eat everything on your plate because there were children starving in China. It was never clear to me how cleaning my plate was going to help starving children thousands of miles away, but that was the way I was raised. Then there was the fact that my mother often claimed she wasn’t hungry so there would be more for us, which just meant that much extra food on my plate for me to clean up. And I did.

Though my childhood was one of serious weight problems and husky-size clothing, I did get lean during my adolescence. I was never particularly athletic, but I got on the Stillman diet and took to riding a bike a lot. It was fortunate that the combination of diet and exercise worked for me, and I didn’t really give it much thought and stayed fit through my early adulthood. But when I was in my mid-30s, married and with kids, old habits kicked back in. Remember those starving children in China? If our five sons left food behind on their plates, I would eat it. Perhaps Chinese children weren’t starving in the ’80s and ’90s, but in my head, that was still where I was at. Stack on top of this the abundant quantities of snacks and junk food in the house. Of course my wife, being the wonderful mother that she is, delighted in making homemade cookies for the kids, so those were always around — fresh, warm and delicious. Add to the mix, this also was the period during which I was building a business, which created a lot of stress in my life. Whatever exercise I was doing, I stopped to make more time for my long work days.

If you asked me 10 years ago what it meant to feel satisfied at the end of a meal, I wouldn’t have known how to answer the question. Back then, I usually ate until I couldn’t eat any more. You know that sensation — the uncomfortable point of feeling like one more bite and you will burst. That was how I ate. And I am sure if I had kept going like that, it would have killed me.

I started out heavy. My family was not well-off — my parents divorced when I was young, and my father wasn’t particularly good about paying child support, so my mother made do with serving my two sisters and me what she could afford; macaroni was a staple of our diet. And the decades in which I grew up, the 1950s and ’60s, were an era when your mom told you to eat everything on your plate because there were children starving in China. It was never clear to me how cleaning my plate was going to help starving children thousands of miles away, but that was the way I was raised. Then there was the fact that my mother often claimed she wasn’t hungry so there would be more for us, which just meant that much extra food on my plate for me to clean up. And I did.

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The weight started to creep back on. I had no understanding of nutrition or portion control. I am not an emotional eater, but if there was food available, I would devour it. As I said at the beginning, I didn’t know what it meant to be satisfied — eating until you are no longer hungry and then stopping. I thought being full meant stuffing myself until I wanted to throw up.

I tried lots of diets: Weight Watchers. Atkins. Jenny Craig. Nutrisystem. You name it, I tried it. I’d lose a bunch of weight, but then it would come right back, plus 10 or 12 pounds more. With each diet it seemed, I ultimately put on more pounds — the all-too-familiar diet yo-yo. One day, I stopped to look at a photograph on the wall of our home of myself, my wife and our sons, taken on a beautiful day in a park not far from our house. And I was appalled. Discouraged. Angry. Looking at that image of me — which hangs next to a picture of my wife and me when we were married and I was in good shape — I felt like I didn’t care about myself. I asked: “What’s wrong with me?” I had young kids, and I couldn’t do anything physical with them. I had a young wife, and I felt like I had let her down. My life was going pretty well in most respects — my family and business were doing well, and we had a nice lifestyle. But I felt embarrassed to be me. One time I was flying on business, and the seat belt wouldn’t fit around me, and I had to get an extension. It was so humiliating.

I didn’t know what to do. I considered bariatric surgery, but that felt too extreme, and the thought of it scared me to death. I was getting kind of desperate; I knew that I had to do something. Then I heard about UCLA’s Risk Factor Obesity Program, which sounded like it might be a good option for me. It turned out to be a great decision. It wasn’t easy. Keeping to a medically supervised protein-powder diet that allowed only 920 calories a day was a challenge for someone who easily could consume thousands of calories at a sitting. Anyone can lose weight on such a diet, but that wasn’t really the hardest part for me. I needed to relearn how to live my life. The classes and support helped, and I kept with it. I had to acknowledge and abandon old habits and build new ones. I learned how to manage social and business situations without insulting everyone around me while maintaining my commitment to the plan. I learned about nutrition and appropriate serving size and to say “no” to fresh-baked cookies and that a small amount of exercise didn’t burn enough calories to offset a huge burrito.

I re-learned to exercise and build muscle, something that now is a priority for me. And I learned what it means to be satisfied.

If I hadn’t lost the weight, I truly believe I might no longer be alive, or, at the very least, I would be absolutely miserable. I was heading toward a heart attack or a stroke or some other devastating weight-related event. Before I undertook this journey, I had food; now I have a life. And for all those who supported me along the way, I am forever grateful.

Dan Galorath is the founder and CEO of Galorath Inc. in El Segundo, California. He lost more than 90 pounds as a patient in the UCLA Risk Factor Obesity Program and has maintained an appropriate weight since 2007.

At his heaviest, “I felt embarrassed to be me,” Dan Galorath says. Since dropping the weight, he has become an avid fitness advocate.

To learn more about the UCLA Center for Human Nutrition and its Risk Factor Obesity Program, go to: clinicalnutrition.ucla.edu
UCLA Health is a partner with the Magnolia Community Initiative to galvanize a community to support, nurture and educate some 35,000 children living in densely populated neighborhoods near downtown Los Angeles.