NYU Langone Health

NEWS & VIEWS

The Newsletter of NYU Langone Health
SUMMER 2019

MILESTONES

When Kindred Cultures Unite, Patients Benefit

NYU Winthrop Hospital serves several hundred thousand Long Island residents a year.

A merger with NYU Winthrop Hospital extends NYU Langone's reach into Long Island.

HISTORICALLY, ABOUT 10% of NYU Langone Health's 1.2 million patients have been residents of Long Island. But that number is sure to grow considerably now that NYU Winthrop, a 591-bed hospital in Mineola, is part of NYU Langone Health System. On August 1, the institutions officially merged, marking the culmination of a process that began more than two years ago and the integration of a vast network of clinical services that will expand and enhance healthcare for the 2.8 million residents of Nassau and Suffolk Counties.

"Successful mergers are made when like-minded organizations join forces," says Robert I. Grossman, MD, the Saul J. Farber Dean and CEO of NYU Langone. "Our institutions share a dedication to quality and excellence that represents true synergy."

Prior to its relationship with NYU Winthrop, NYU Langone had recruited more than 200 physicians in Nassau County to extend its ambulatory care network east of Manhattan, beyond Queens. "It became clear that we needed an outstanding local hospital to partner with, particularly for practices whose patients might require inpatient care," explains Andrew Brotman, MD, senior vice president, vice dean for clinical affairs and strategy, and chief clinical officer. "In NYU Winthrop, we found an institution that not only shares our high clinical standards and our commitment to improving quality and safety standards, but also has a culture that's a good fit with ours."

Though NYU Langone's main campus in mid-Manhattan is only about 20 miles from Nassau County, the drive can take up to two hours. "If you need to be hospitalized, you want the best possible care within arm's reach," says Joseph Greco, MD, senior vice president and executive director of NYU Winthrop, the hospital's chief medical officer, and longtime chair of its Department of Anesthesiology. "NYU Langone's Long Island residents now have access to an inpatient facility much closer to home." The merger capitalizes on the excellence both institutions share in numerous clinical areas, including cancer, stroke, diabetes, trauma, pediatrics, and transcatheter cardiac procedures.

Among the more notable benefits to Long Island residents is NYU Winthrop's expanded organ transplant capability. Thanks to the expertise of NYU Langone's Transplant Institute, NYU Winthrop's patients are now offered heart, lung, and liver transplants in addition to kidney transplants. While the actual procedures are performed at NYU Langone's main campus in Manhattan, much of the pre- and post-operative care takes place at NYU Winthrop. "Before the merger," Dr. Greco explains, "our patients had their transplants at hospitals we were not affiliated with. Now, they can be prepped for the operation at NYU Winthrop and return to their own community for recovery and rehabilitation."

Wherever Long Island residents are treated within NYU Langone's expansive system, they are ensured continuity of care through its electronic medical record system, known as Epic. By October, NYU Winthrop's patients will be fully integrated into Epic, making their electronic health record accessible to care providers across NYU Langone, including NYU Winthrop's physician practices and ambulatory care sites in more than 160 locations, and to patients via MyChart, a secure online portal. "Long Island residents not only have access to NYU Langone physicians closer to their own neighborhoods," says Dr. Brotman, "but these patients can flow seamlessly from one clinical location to another because each of their doctors will have full knowledge of their medical history."

NYU Winthrop was Long Island's first nonprofit hospital, founded in 1896 by a group of local physicians and concerned citizens. Known as Winthrop University Hospital, it was named for a family that traces its roots to John Winthrop, the first governor of the Massachusetts Bay Colony. Today, NYU Winthrop serves several hundred thousand patients, who are now members of NYU Langone's care network.

"We've always offered the high-level primary and specialty care of a major teaching hospital, along with the personal touch of a community hospital," notes Dr. Greco. "Now, we're part of a health system that offers ultra-specialized care—the most advanced therapies and procedures—to serve all the needs of our patients." ■

Dr. Samer Al-Homsi, director of the Blood and Marrow Transplant Program (right), with his patient Jack Sebastian.

LEADERSHIP

For Blood Cancers, a Bold New Vision Transforms Patient Care

NYU Langone's Blood and Bone Marrow Transplant Program brings the latest research to patients.

FOR JACK SEBASTIAN, retirement was meant to be filled with sojourns to bed and breakfasts throughout the Northeast, and summers spent boating at the riverside cabin he shares with his sister in the Adirondacks. Instead, in January 2018, at age 65, and just weeks after saying good-bye to the Brooklyn housewares store where he had worked as a salesman, the Greenwich Village resident began feeling weak, dizzy, and short of breath while doing simple daily errands. The symptoms were surprising for a man who had enjoyed near perfect health throughout his adult life and took not a single medication.

When a routine visit to Sebastian's internist revealed that his white and red blood cell counts were low, he was referred to hematologist Bruce G. Raphael, MD, at NYU Langone Health. Concerned, Dr. Raphael performed a bone marrow biopsy. Three days later, Sebastian learned why his energy had been lagging so: he had acute myeloid leukemia, or AML. This blood cancer is caused by the rapid production of abnormal white blood cells that spread from the marrow—the soft, spongy tissue inside bones where blood cells are produced—into the bloodstream and, often, other body parts. Nearly 11,000 people in the US die from the disease each year, and the five-year survival rate is only 27%.

"It was scary," Sebastian says of the diagnosis. "I started thinking about everything I have: a summer place, family, strong faith, time to enjoy life. So I tried to think positively."

Given the aggressive nature of AML, which likely would have killed him within a matter of weeks, Sebastian didn't have much time to dwell on his situation. The next day he began a three-week inpatient stay at NYU Langone to receive chemotherapy, whose goal is to empty the bone marrow of leukemia cells and allow normal stem cells to repopulate the marrow. This prepares the patient for an allogeneic transplant, during which stem cells from a matching donor are given to the patient, thereby introducing an entirely new immune system in the patient.

"Essentially, it's a fight between two immune systems," says hematologist-oncologist Samer Al-Homsi, MD, director of the Blood and Marrow Transplant Program at NYU Langone's Laura and Isaac Perlmutter Cancer Center. "The objective is to weaken the existing one and give the advantage to the new one so that it can take over and keep the leukemia in remission."

It was Sebastian's good fortune to have Dr. Al-Homsi in his corner. Since joining NYU Langone's Perlmutter Cancer Center in June 2017, he has led the dramatic expansion of the Blood and Marrow Transplant Program. Within months of his arrival, the program gained membership in the National Marrow Donor Program, which operates the Be the Match Registry, a worldwide database consisting of 10 million potential donors—a boon for patients like Sebastian, whose siblings were not viable matches. The program also became accredited by the Foundation for the Accreditation of Cellular Therapy. In addition, Dr. Al-Homsi has greatly boosted the program's volume of autologous transplants, which use healthy stem cells from a patient's own body to treat two other common types of blood cancer, lymphoma and multiple myeloma.

Perlmutter Cancer Center, which was designated a Comprehensive Cancer Center in January by the National Cancer Institute in recognition of its top-tier research and clinical services, is on track to perform 100 transplants this year, nearly half of them allogeneic. "Dr. Al-Homsi has totally transformed our blood cancer program," says Benjamin Neel, MD, PhD, director of the Perlmutter Cancer Center. Emblematic of that growth is a recent anonymous $75 million gift to establish the Center for Blood Cancers, which will advance clinical and research efforts focused on multiple myeloma, a cancer of the plasma cells that leaves the body susceptible to infection and fractures. "This generous gift will help patients with blood cancers achieve better outcomes and advance important new research," says Robert I. Grossman, MD, the Saul J. Farber Dean and CEO of NYU Langone.

Dr. Al-Homsi has already led a major research breakthrough in transplant treatment that benefited Sebastian: a new approach to fending off graft versus host disease, or GvHD, a medical complication in which the grafted blood and marrow cells view the recipient's body as foreign and begin to attack it. The syndrome, which affects up to 60% of allogeneic transplant patients, can in its acute form cause skin rashes, liver damage, and inflammation of the intestinal tract. To prevent or at least mitigate this potentially life-threatening complication, doctors typically administer a six-month course of powerful immunosuppressants that can cause side effects, including kidney damage. By contrast, Dr. Al-Homsi combines cyclophosphamide, an older drug that attacks the donor's activated T cells, with a newer medication called bortezomib, which targets the dendritic cells. His phase 1 and 2 clinical trials, published in *Biology of Blood and Bone Marrow Trans-*

In myeloid leukemia, abnormal white blood cells from the bone marrow can spill into the bloodstream, impairing the body's ability to fight infection.

PHOTO: SASHA MALLA

Perlmutter Cancer Center, recently designated a Comprehensive Cancer Center by the NCI in recognition of its top-tier research and clinical services, is on track to perform 100 blood and bone marrow transplants this year.

plantation, showed promising efficacy in controlling GvHD while sparing patients the burden of traditional immunosuppressants. What's more, the combination needs to be taken for only four days.

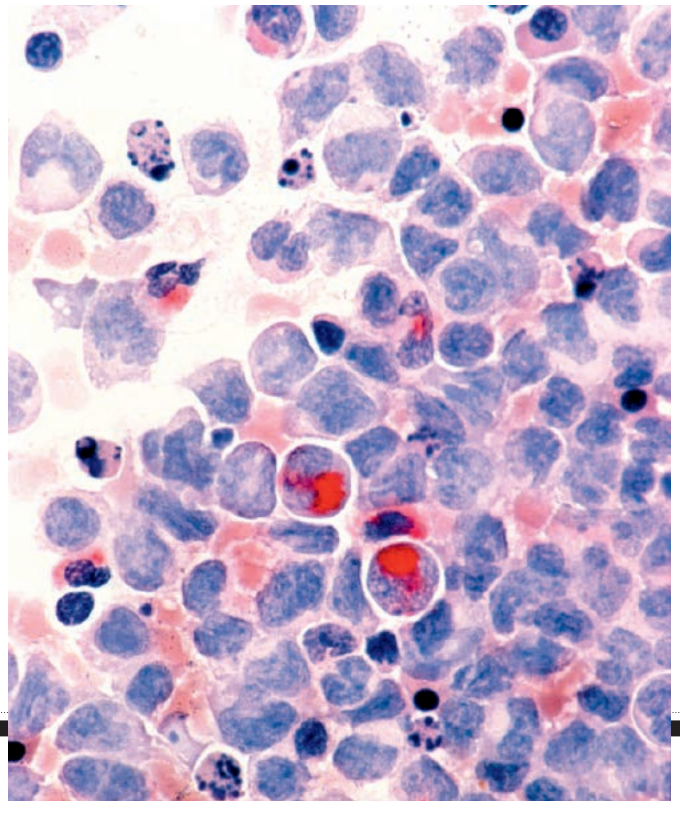
Sebastian completed a second course of chemo, and a compatible donor was identified a month later. He returned to NYU Langone for a four-week inpatient stay. On May 24, following conditioning therapy to remove any remaining abnormal cells, he received the donor blood and marrow cells, a one-time infusion into his bloodstream that took a mere 30 minutes but effectively changed everything. "Dr. Al-Homsi and the nurses call it your new birthday," Sebastian says of the transplant. "They gave me such hope and confidence."

During the next several days, Sebastian felt flu-like symptoms as the new stem cells took root in his bone marrow. However, he suffered no GvHD symptoms and slowly regained strength day by day in the positive-pressure patient room, specially designed to protect people with a compromised immune system from viruses and bacteria.

After leaving the hospital, Sebastian was instructed to wear a mask in public and avoid crowded settings, such as the subway, until his immune system reconstituted. But now, a year later, his follow-up biopsies have confirmed that his old blood and bone marrow, and the deadly disease that had taken them over, are gone. "Jack is a model patient who complied with every instruction from day one," says Dr. Al-Homsi. "He's past the point when most relapses occur and is in great shape overall."

This past Memorial Day, Sebastian finally returned to his summer home, free to kayak, hike, and take in the glorious sunsets from his living room. His family presented him with a cake and a "birthday" card to mark the anniversary of his transplant. "I feel like I've got my life back," he says, "and that now I can do all the things I'd hoped to do in retirement." ■

FOR INFORMATION ABOUT BLOOD AND BONE MARROW TRANSPLANTS, visit nyulangone.org/bloodmarrowtransplant or call 646-501-4848 for adults or 646-754-1569 for children.



PHOTOS: NATIONAL CANCER INSTITUTE/SCIENCE PHOTO LIBRARY (RIGHT); GETTY IMAGES/JOHN FEDELE (TOP)

TELEMEDICINE

Sick Child? Care Is Just an App Away.

NYU Langone's Virtual Urgent Care welcomes children ages five and older.

With appointments starting at 7:00 a.m., parents can clear their child for school before heading off to work.

CHILDREN CAN GET SICK at the worst times—at the beach rental, with one parent away on business, late at night, or on the weekend—and making a prompt visit to the doctor is often a logistical nightmare. Now, like adults, children five and older can be evaluated right from home by one of 30 board-certified NYU Langone Health emergency medicine physicians, all trained in telemedicine, using Virtual Urgent Care. This service is available seven days a week and is easily accessed using the NYU Langone mobile app.

A video visit, which typically takes about 10 minutes, is ideal for minor conditions like cold and flu, upper respiratory infections, rashes, pink eye, allergies, and fever. As with any physician consultation, a parent or guardian must be present for the entire visit.

"Parents act as our hands," says Viraj Lakdawala, MD, medical director of Virtual Urgent Care. "They can push on their child's belly. They can show us any sort of rashes. They can point the camera into the child's mouth to look at the throat and feel the neck to see if there's any swelling of the lymph nodes."

Because children are anatomically and physiologically different from adults or even teens, Virtual Urgent Care doctors can tap the expertise of one of the department's 26 pediatric emergency medicine specialists as needed, having them consult on the case by video conference. If necessary, the patient can also be referred to a pediatric specialist at Hassenfeld Children's Hospital or the KiDS Emergency Department at the Ronald O. Perelman Center for Emergency Services. In every case, a summary of the visit, including any medications prescribed and follow-up referrals, is integrated into NYU Langone's electronic medical record so that it's available for the child's regular pediatrician to review. The program's expansion has received generous funding from Nandansons Charitable Foundation.

Virtual Urgent Care appointments are available from 7:00 a.m. to 11:00 p.m. on weekdays, 8:00 a.m. to 8:00 p.m. on weekends, and 8:00 a.m. to 4:00 p.m. on holidays. The service accepts most insurance plans. Same-day appointments are available, and for parents who would like their child examined before sending them off to school, early morning appointments can also be scheduled.

"The expansion of Virtual Urgent Care to younger children is a tremendous opportunity for us to extend and improve their care," says Dr. Lakdawala. ■

MAKING A VIRTUAL URGENT CARE VIDEO VISIT FOR PEDIATRIC PATIENTS requires the accompanying parent or guardian to have established proxy access to the child's NYU Langone MyChart account. Access can be arranged in person at your pediatrician's office, or you may request temporary access by calling 929-455-6409. Download the NYU Langone Health app to get started.

THE EXPLAINER

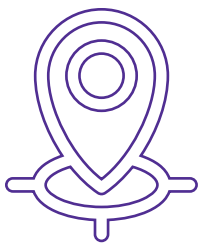
Five Things You Should Know about Nonalcoholic Fatty Liver Disease

Dr. Ira Jacobson, a leading liver expert, discusses an underdiagnosed disease that afflicts 3 out of 10 adults—and how physicians and their patients can combat it.

After two decades of research that helped lead to a cure for hepatitis C, Ira Jacobson, MD, who joined NYU Langone Health in 2017 as director of hepatology in the Division of Gastroenterology and Hepatology, has embarked on a new crusade: defeating nonalcoholic fatty liver disease (NAFLD). Caused by the excess buildup of fat in the liver and closely linked to the rising incidence of obesity and type 2 diabetes, NAFLD affects an estimated 30% of American adults. Left unchecked, it can be as damaging to the liver as excessive drinking, elevating the risk for liver cancer and liver failure, as well as cardiovascular disease. Despite its prevalence, NAFLD is a largely silent epidemic, with insufficient awareness among patients and, surprisingly, even many physicians. Here, Dr. Jacobson sheds light on this complex, poorly understood disease.

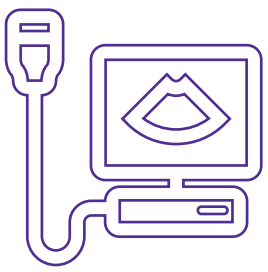
1 The causes are unclear, but there are clues.

Doctors don't know why some people who drink little to no alcohol are prone to NAFLD and others aren't. That's not the only mystery. While some cases of NAFLD don't advance—a version known as simple fatty liver, or steatosis—others cause inflammation and cell damage, leading to a more severe form called nonalcoholic steatohepatitis (NASH). At that point, it can lead to scarring, or fibrosis, which in its late stage is called cirrhosis. Up to 40% of patients with fatty liver disease have NASH, which greatly increases the risk of progressive scarring, liver cancer, liver failure, and potentially, the need for a liver transplant. Those most susceptible to developing NASH are obese, have type 2 diabetes, or have been diagnosed with metabolic syndrome—a cluster of conditions that includes hypertension, insulin resistance, excess abdominal fat, and high levels of cholesterol or triglycerides.



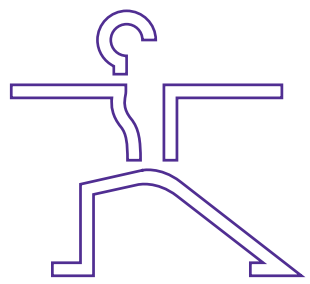
2 Pinpointing damage to the liver is tricky.

A precise diagnosis for NAFLD is elusive, and screening for it is challenging. "The dilemma," explains Dr. Jacobson, "is that liver disease rarely exhibits any specific symptoms until the damage is done." While liver enzymes are tested during routine blood workups, some people within the normal range can still develop or have advanced disease. Beyond this, many private and hospital labs use reference ranges that are not yet aligned with new clinical guidelines that significantly lower the threshold for abnormal levels. Dr. Jacobson believes that the key to early detection is vigilance. "Clinicians must be on high alert for fatty liver disease, especially in patients who fit the high-risk profile," he says. "An elevation of liver enzymes, however slight, is often the first sign that the patient has a liver condition."



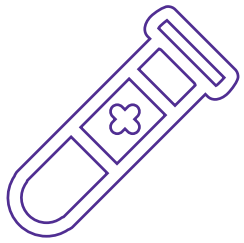
3 A new imaging tool is changing the game.

If a patient's liver enzymes are elevated, their doctor may order imaging tests, such as ultrasound, to confirm the presence and assess the extent of fat buildup, along with lab tests to check for other types of liver disease. If the initial findings are inconclusive, the most definitive way to assess inflammation and scarring is to perform a liver biopsy. But biopsies are invasive, painful, and carry the risk of complications, so Dr. Jacobson favors a recently developed diagnostic tool called transient elastography, a noninvasive ultrasound-based technique that can not only estimate liver scarring by measuring the organ's degree of stiffness, but also quantify the amount of fat in the liver. "This tool has transformed the practice of hepatology," he notes. "Blood markers can also be used to help identify patients at high risk for developing NASH and liver scarring." Dr. Jacobson adds that even when a radiology report includes an incidental finding of fat in the liver that is deemed "clinically insignificant," the physician should consider referring the patient to a liver specialist.



4 Lifestyle changes can make NAFLD a nonissue.

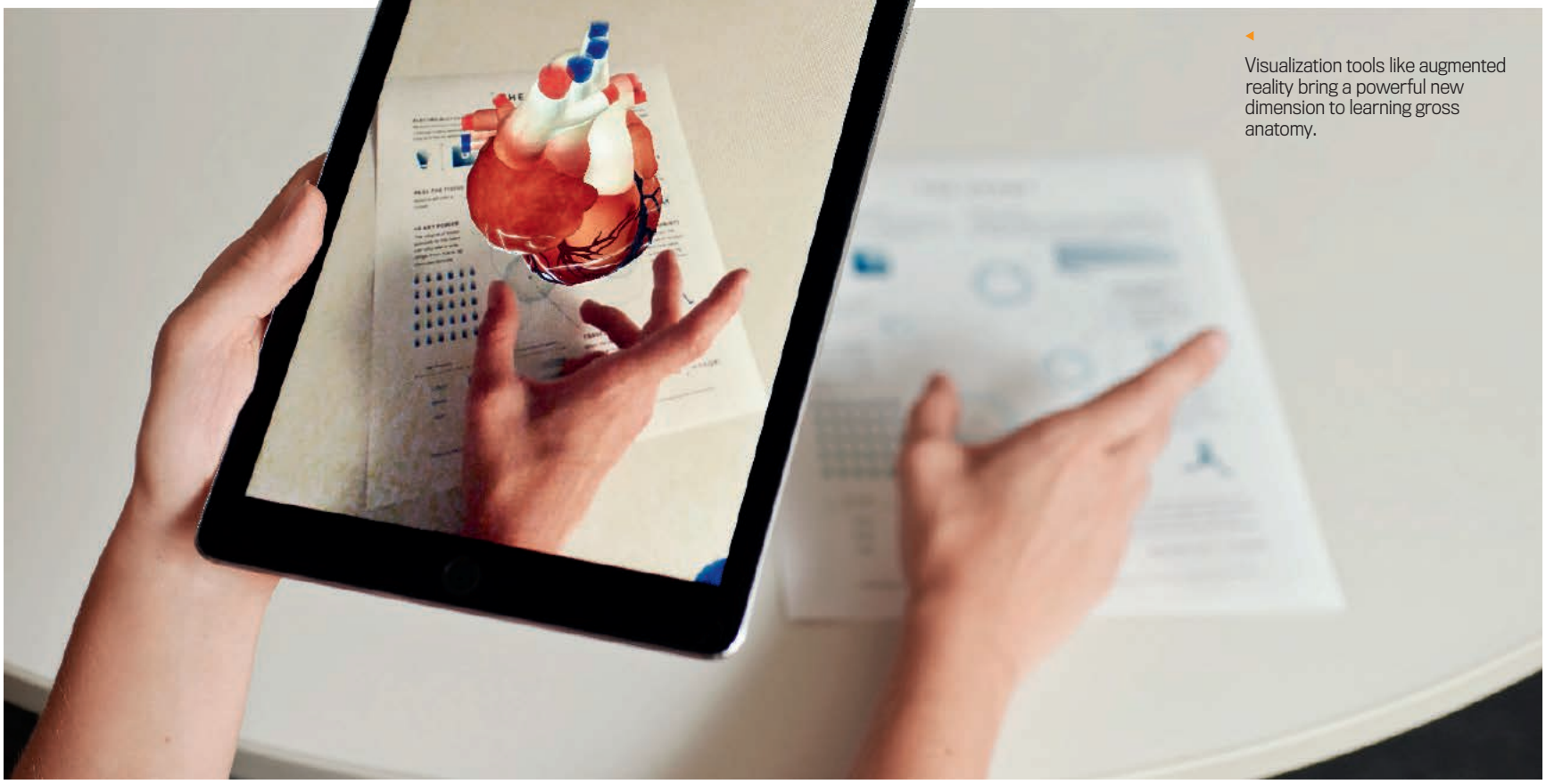
While patients tend to focus on reversing NAFLD, Dr. Jacobson emphasizes that as long as the disease is detected early enough, it doesn't need to be cured—just stopped in its tracks. "In people who are sedentary, simply starting to exercise reduces the amount of fat in the liver—even just taking long walks regularly," he says. For patients who are overweight or obese, weight loss is central to managing the disease. "Trimming body weight by as little as 3% can decrease the degree of fat deposition in the liver, a 5% to 7% loss can reduce inflammation, and a 10% drop can actually start to reverse scarring," he explains. A diet high in healthy fats and low in carbohydrates has also been shown to reduce the amount of fat in the liver.



5 Treatments may be on the horizon.

Developing a singularly effective medication for NAFLD has been challenging because the disease is rooted in multiple underlying mechanisms, both genetic and environmental. Still, researchers could be on the verge of a breakthrough. Along with other important clinical trials for this disease, Dr. Jacobson and his colleagues recently initiated a multicenter phase 3 clinical trial at NYU Langone that combines three drugs aimed at reducing fat buildup, inflammation, and scarring in the liver at the same time. "Combination therapies that target several disease pathways at once will be a major step forward," explains Dr. Jacobson. "The liver is a remarkable organ, the only one that can regenerate when a piece is removed. It can even dissolve its own scar tissue—if we stop the processes that caused the scarring in the first place." ■

TO FIND A DOCTOR WHO TREATS LIVER DISEASE, visit nyulangone.org/hepatologyassociates or call 212-263-3643.



Visualization tools like augmented reality bring a powerful new dimension to learning gross anatomy.

EDUCATION

CAN YOU TEACH ANATOMY WITHOUT CADAVERS?

NYU School of Medicine says yes.

THERE'S A HOLLOW space in the human skull that's no bigger than a hazelnut but is a major source of headache for medical students: the pterygopalatine fossa. This hidden labyrinth of canals, tucked behind the jawbone, houses a bundle of nerves and vessels supplying all of the facial structures. Studying it is a real strain on the imagination because no one can actually see this body part, at least not without destroying the skull.

"Students can sort of find it during dissection, but it doesn't look like much after they've broken apart the skull to get to it," says Victoria Harnik, PhD, associate dean for curriculum at NYU School of Medicine. "It's a prime example of the limitations of cadavers."

In the four decades that Dr. Harnik has been teaching gross anatomy, human dissection has figured prominently in her instruction. But this August, for the first time in NYU School of Medicine's 178-year history, students will learn anatomy without it. Instead, they will rely on modern teaching aids, like virtual and augmented reality, 3-D cinematic renderings of CT and MRI scans, and a new collection of plastinations—human cadavers preserved with plastic resins. In a pilot run of the new curriculum last year, upper-level students found training without human dissection comparable to their experience with the cadavers, says Dr. Harnik.

While NYU School of Medicine will retain some cadavers for demonstration purposes, the inaugural anatomy module taught at the new NYU Long Island School of Medicine, which welcomed its first 24 students last month, will eliminate cadavers altogether. This historic shift is part of an institution-wide embrace of technology at NYU Langone Health, led by Robert I. Grossman, MD, the Saul J. Farber Dean and CEO, whose vision for modernizing medicine has driven paper medical records at the institution to the point of extinction and ensured that the Helen L. and Martin S. Kimmel Pavilion, opened last summer, is now among the most digitally sophisticated inpatient facilities in the nation.

Setting aside the technical challenges of reaching the body's many nooks and crannies without destroying them in the process, it's often difficult to link anatomical structures to clinical problems in a body without a pulse. What's more, cadavers are expensive to acquire and maintain. With newer digital tools, students can rotate a heart in three dimensions and observe how it behaves, say, when a valve leaks, or they can crack open a skull to see the pterygopalatine fossa, intact and in context, and then put it all back together again. "We now have access to a wide range of rich visualization tools that represent a big part of the future of healthcare practice, not just medical education," says Marc Triola, MD, associate dean for educational informatics and the founding director of the School's Institute for Innovations in Medical Education (IIME), which has partnered with the Office of Medical Education to implement the new anatomy modules.

Gregory Dorsainville, senior multimedia developer at IIME, who oversees the design, development, and implementation of augmented and virtual reality, believes the technology not only helps teach anatomy but also gives learners valuable exposure to broader trends in clinical practice. "Whether it's planning neurosurgeries or visualizing three-dimensional radiographic studies," Dorsainville notes, "being able to use these technologies to explore and understand the human body in new ways is a key part of the future."

Nationwide, only a handful of other medical schools have abandoned cadavers, and the jury is still out on the educational value of virtual and augmented reality.

But the goal of the reimagined teaching module, called Living Anatomy, is not simply to replace cadavers with technology, but to find the optimal way to teach anatomy. That effort enlists a team of anatomists, pathologists, and radiologists to help rethink the modules and place new emphasis on multidisciplinary integration. "Each time students see an anatomical structure, they are also shown the imaging side of it," says radiologist Kira Melamud, MD.

"The idea is to help students learn anatomy in the context of diseases and clinical practice," adds pathologist Amy Rapkiewicz, MD, director of the Integrated Anatomy course debuting at NYU Long Island School of Medicine. "What we're really doing is making a better anatomy module that brings anatomy to life in ways that were impossible in the past." ■

Digital 3-D renderings of plastinations—cadavers preserved with plastic—offer advantages over conventional cadavers.

PHOTOS: SASHA MALLA (TOP); GREGORY DORSAINVILLE (RIGHT)

SPORTS HEALTH

When the Last Resort Is the Best Solution

Doctors at NYU Langone's Spine Center do all they can to help patients avoid back surgery. But even when a procedure is necessary, a full recovery is the norm.

Joined by her surgeon and fellow running enthusiast, Dr. Erich Anderer, Connie Allen enjoys a full recovery one year after back surgery.

AS A NEUROSURGEON who specializes in spinal cases, Erich Anderer, MD, has spent well over a decade mastering techniques and procedures to treat severe back pain—and avoiding them whenever possible. "My philosophy is 'less is more,' " says Dr. Anderer, chief of neurosurgery at NYU Langone Hospital—Brooklyn and a member of NYU Langone Health's Spine Center. "There are situations when we have no choice but to fix a problem in the operating room, but I work with patients to develop a treatment plan that usually doesn't require surgery."

Unlike most of Dr. Anderer's patients, Connie Allen, a devoted athlete who has run four marathons, was one of those who didn't have a choice. In 2017, the 30-year-old fitness enthusiast from Verona, New Jersey, was squatting 200 pounds at the gym when she felt something pop in her lower back. Intense pain radiated down her legs. Refusing to let the injury slow her down, Allen tried a variety of alternative therapies: acupuncture, massage, chiropractic. Nothing helped. Then, an MRI revealed the reason: a ruptured disc in her lumbar spine was compressing nearby nerves. An orthopedist recommended surgery and giving up the weights.

Allen reluctantly agreed, but then she got a reprieve. When her blood work came back, she learned she was pregnant, so surgery was off the table. Allen's discomfort subsided, possibly due to a surge in pregnancy hormones that relaxed her back muscles, but the pain returned not long after her daughter was born. By January 2018, she was in "a really bad place," she recalls. "I could barely lift the baby to feed her. I couldn't sleep, couldn't eat."

Finally, in June 2018, on the advice of an acquaintance, she reached out to Dr. Anderer. After reviewing Allen's previous MRI, he ordered a new one. The second scan confirmed the worst: a bulging disc that had narrowed the canal, compressing nerve roots. If the bulge expanded and completely choked off the spinal canal, it could cause severe neurological deficits, such as the loss of bowel and bladder function. "It was an extremely large herniation of the L4-5 disc, the one most commonly injured," explains Dr. Anderer. The success rate for disc surgery is about 90%, but even so, he considers it only if symptoms persist for more than six weeks. Because Allen was debilitated and had been in pain for more than a year, he felt she was a suitable candidate. "I told Connie that she had suffered long enough," says Dr. Anderer.

Allen knew she needed surgery but feared it would end her active lifestyle. Dr. Anderer, an athlete himself, helped her embrace a different perspective. "Some clinicians discourage people from returning to strenuous activity following disc herniation," he says. "My goal is not just to get patients pain-free, but back to doing all the things they did before the injury, with no limits." Allen found Dr. Anderer's words "extremely powerful" because "most doctors told me all the things I should never do again," she says. "He made me feel ready for surgery."

Dr. Anderer operated on Allen later that month. Using a surgical microscope to maneuver through an incision less than one inch wide, he removed the ruptured portion of her disc in under an hour. The procedure, a microdiscectomy, is one that Dr. Anderer commonly performs, and it accounts for about half of the more than 1 million back surgeries performed annually in the US. Of the roughly 500 patients diagnosed with a herniated disc that he sees each year, fewer than 10% require surgery. Because up to 20% of injured discs reherniate at some point, Dr. Anderer tells his patients that the best way to avoid a recurrence is to strengthen their core. "I love yoga, Pilates, meditation, and other self-care strategies because they empower the patient, even those who have had surgery," Dr. Anderer says.

Allen went home—pain-free—the same day she had surgery. "I couldn't walk in," she says, "but I was able to walk out." Dr. Anderer knew that Allen's fitness would enable her to make a full recovery, but he cautioned her to take it slowly. Three months after surgery, she was able to resume weight lifting. "The fact that I could is just amazing," says Allen. "I feel like I can do anything." ■

"My goal is not just to get patients pain-free, but back to doing all the things they did before the injury, with no limits," says neurosurgeon Dr. Erich Anderer.

TO FIND A DOCTOR WHO TREATS BACK OR NECK PAIN, visit nyulangone.org/spinecenter or call 844-698-2224.

NYU Langone Health's Spine Center provides nonsurgical and surgical treatment of degenerative spine conditions, spinal deformities, and complex spinal problems. Specialists from the nationally ranked clinical departments of Orthopedic Surgery, Neurosurgery, and Rehabilitative Medicine see more than 18,000 patients and perform 2,850 surgeries and 3,000 interventional procedures annually. "Our clinical care emphasizes collaboration between neurosurgeons and orthopedic surgeons, which results in better patient care," explains Kola Jegede, MD, an orthopedic specialist at NYU Langone Hospital–Brooklyn.

PHOTO: BRAD TRENT

NEW SPACES

KEEPING A CLOSE WATCH ON ACUTE BRAIN INJURIES

A new neurointensive care unit at NYU Langone Hospital–Brooklyn helps doctors spot threats before they become emergencies.

IN THE AFTERMATH of a stroke or other acute brain injury, vigilance is vital. Should brain swelling, bleeding, or seizures set in, the sooner neurointensivists can identify such life-threatening conditions, the more effectively they can treat them. Studies have shown that patients with secondary complications have better outcomes when they're treated by experts working together in a dedicated facility, but many hospitals, lacking such a specialized unit, care for acutely ill neurological and neurosurgical patients in a general intensive care unit. In March, NYU Langone Hospital—Brooklyn took its care for such patients to a new level when it opened a state-of-the-art neurointensive care unit. "The recovery period can make or break how a patient ultimately does," explains Aaron Lord, MD, chief of neurology at NYU Langone Hospital—Brooklyn, who supervises the unit with Erich Anderer, MD, the hospital's chief of neurosurgery. "This new facility enables us to provide the very best care."

The 3,500-square-foot neurointensive care unit, located directly above a renovated 20-bed neurology floor and stroke rehabilitation unit, expands the adjacent 10-bed surgical intensive care unit as it builds on the hospital's expertise in neurology and neurosurgery. NYU Langone Hospital—Brooklyn is the borough's first Joint Commission–certified Comprehensive Stroke Center, and the only hospital in the Northeast that is also certified by the Joint Commission for stroke rehabilitation. Its stroke treatment times are faster, on average, than other New York City hospitals. The hospital performs nearly 500 neurosurgical procedures annually.

Complications such as brain swelling or bleeding are sometimes signified by very subtle changes, so each of the unit's four single-bed rooms is equipped with the most advanced monitoring and diagnostic equipment. Devices track intracranial pressure and brain oxygen levels continuously to alert clinicians to a looming threat, and bedside ultrasound technology provides speedy imaging. To detect seizures or other complications, brain signals are audited around-the-clock by an electroencephalogram, or EEG, which can be accessed remotely by video feed. The rooms are also equipped with ceiling-mounted lifts to help patients move around when possible. "Mobility is the key to advancing patients to recovery quickly and preventing conditions like pneumonia and deep vein thrombosis," notes Dr. Anderer.

The unit's nursing station, or Clinical Integration Center, provides a hub for members of the care team to collaborate. "Critical care is a multidisciplinary endeavor, so we need a place where we can share information, develop a treatment plan, and discuss how to execute it," explains Dr. Lord. The neurointensive care unit is staffed by four fellowship-trained neurointensivists, more than at any other hospital in Brooklyn, and a dedicated on-call room for residents and physician assistants ensures that a care provider is on-site overnight.

"Our charge is to provide high-level neurological and neurosurgical care for our community," says Dr. Lord. "If a patient has a complicated aneurysm, spinal tumor, or other condition that requires high-level expertise and care, we no longer need to transfer them from their families and loved ones to our Manhattan campus." ■

LOCATIONS

A New Cancer Center Rises in Sunset Park

Brooklyn residents now benefit from convenient, coordinated care at a Perlmutter Cancer Center outpatient facility in their own backyard.

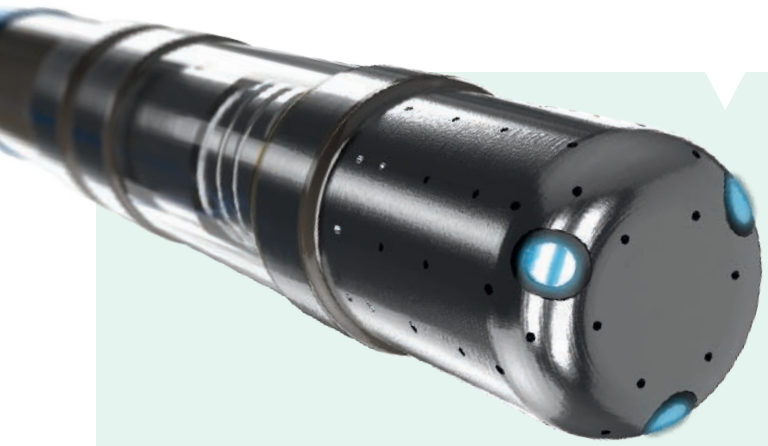
FOR PATIENTS DEALING WITH the complexities of cancer treatment, having access to a range of outpatient services under one roof can make life a bit easier, preventing the need to travel to different sites or schedule multiple appointments. Perlmutter Cancer Center—Sunset Park, which opened in June, provides this benefit for Brooklyn residents. The 22,000-square-foot multispecialty facility offers nonsurgical treatments for many types of cancer at 5718 Second Avenue, just two blocks from NYU Langone Hospital—Brooklyn. For those requiring surgical treatment, NYU Langone Hospital—Brooklyn offers both conventional and robotic techniques, making it unnecessary, in most cases, for patients to travel to NYU Langone's main campus in Manhattan.

The center's first-floor radiation oncology suite is equipped with advanced technologies that precisely target tumors and minimize damage to surrounding tissue and organs, including a linear accelerator that provides external beam therapy and a computed tomography (CT) simulator that allows for three-dimensional treatment planning. On the second floor, 21 private bays are devoted to chemotherapy, blood transfusions, and other infusion treatments. Rounding out the services available on-site are genetic counseling, nutrition, and social services.

PHOTO: RENE PEREZ

Perlmutter Cancer Center—Sunset Park patients also have access to the burgeoning portfolio of clinical trials available at Perlmutter's Manhattan site. Perlmutter Cancer Center recently earned comprehensive status from the National Cancer Institute, moving it into an elite group of 50 such cancer centers nationwide. "As a comprehensive cancer center, we want to provide patients with the very best, most convenient care," says Benjamin Neel, MD, PhD, director of Perlmutter Cancer Center. "This facility offers the Brooklyn community new and unique access to exceptional care." ■

FOR INFORMATION ABOUT PERLMUTTER CANCER CENTER—SUNSET PARK, visit nyulangone.org/perlmuttersunsetpark or call 718-907-4880.



INNOVATION

A FASTER FIX FOR IRREGULAR HEARTBEATS

NYU Langone's Heart Rhythm Center is the first in the US to test a new breed of device to eliminate the faulty electrical signals that cause arrhythmias.

IT MAY NOT LOOK like much—just a tiny metal tip attached to a thin tube—but this device could prove to be a game changer for some of the roughly 4 million people in the US who have an irregular heartbeat, or arrhythmia. This unsettling condition results when electrical signals in the heart short-circuit, causing the heart to beat too quickly, too slowly, or irregularly. Symptoms include dizziness, chest pain, shortness of breath, and in extreme cases, sudden cardiac arrest.

Many patients find relief through a combination of blood pressure medications and lifestyle changes that eliminate stimulants such as nicotine and caffeine. But when symptoms persist, cardiologists often recommend a nonsurgical procedure called catheter ablation to destroy, or ablate, the misfiring heart cells. While the procedure can restore a normal heart rhythm, it can be taxing. Over the course of two to four hours, depending on the case, a team of doctors, guided by X-ray imaging, delicately thread a thin catheter through a blood vessel in the groin and up into the heart. Once it is properly positioned, they use the tip of the device to burn misfiring cardiac cells.

Now, a new advance in the field could make the procedure easier on patients. In February, Larry Chinitz, MD, director of the Heart Rhythm Center at NYU Langone Health, became the first physician in the US to trial a new ablation device, called the Qdot Micro, that generates roughly three times the heating power of conventional devices. "It can burn away faulty cells in as little as four seconds and potentially cut the procedure length in half," notes Dr. Chinitz, the Alvin Benjamin and Kenneth Coyle, Sr., Family Professor of Medicine and Cardiac Electrophysiology. For patients, this means less sedation and reduced exposure time to X-rays. The shorter ablation time also reduces the risk of damaging healthy surrounding tissue.

The landmark trial is part of an investigational study under way at 30 sites nationwide involving 185 patients with atrial fibrillation, the most common form of arrhythmia. It's no surprise that Dr. Chinitz is taking the lead in the trial. A pioneer of catheter ablation and other novel treatments for heart arrhythmia, he heads one of the busiest arrhythmia centers in the country. His team is now treating two or three patients per month with the new device, and early results are encouraging. "This is a significant new technology," he says, "and we expect it will improve both patient safety and clinical outcomes." ■

TO FIND A DOCTOR WHO TREATS ARRHYTHMIAS, visit nyulangone.org/heartrhythmcenter or call 212-263-7149.

RESEARCH

Another Reason to Thank Your Mother

Mitochondrial diseases that stymie the body's ability to produce energy are passed down from the mother's side. Fortunately, these incurable genetic conditions are rare. A new study from NYU School of Medicine researchers helps explain why.

HUMANS INHERIT ONE SET of 23 chromosomes from each parent. To weed out genetic mutations, reproduction includes well-honed proofreading mechanisms that can correct errant DNA when chromosomes recombine during sperm and egg cell production.

Like all multicellular organisms, though, we inherit a bit of extra DNA exclusively from our mothers. This mysterious DNA—which accounts for less than 1% of our total cache— resides in mitochondria, the machine-like organelles in every cell that convert food into energy. Unlike chromosomal DNA, mitochondrial DNA transfers directly from mother to child without any genetic reshuffling. So how does it discard mutations to ensure its survival?

"The longstanding question is what mechanism prevents dysfunctional mitochondrial DNA from getting passed on," says Ruth Lehmann, PhD, the Laura and Isaac Perlmutter Professor of Cell Biology and chair of the Department of Cell Biology at NYU Langone Health.

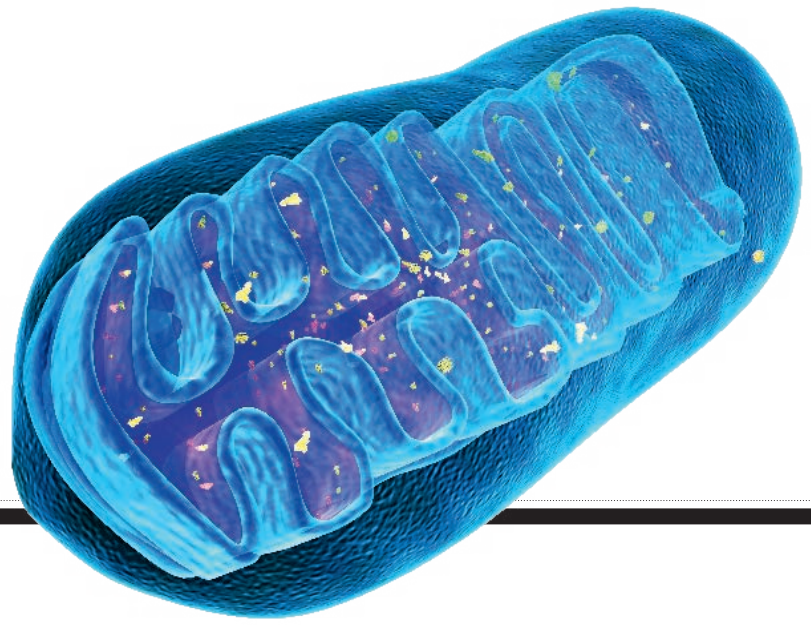
The answer could shed much-needed light on a host of serious hereditary conditions linked to mutated mitochondrial genes, including muscle weakness and epilepsy, as well as late-onset diseases such as diabetes, cardiovascular disease, and dementia. An estimated one in 5,000 people suffer from some form of mitochondrial disease. Although rare, these heritable conditions are largely untreatable and incurable.

That may change, thanks in part to new findings from researchers at NYU School of Medicine. In a recent issue of the journal *Nature*, a team led by Dr. Lehmann, director of the Skirball Institute of Biomolecular Medicine, and postdoctoral researcher Thomas Hurd, PhD, now an assistant professor at the University of Toronto, described for the first time a quality-control mechanism in the mitochondrial cells of fruit flies. The landmark finding shows how errant DNA gets culled and may point the way to novel interventions.

To meet the body's intense energy demands, mitochondria fuse together inside cells to form long tubes filled with multiple copies of the mitochondrial genome. Scientists think the consolidation may help maximize energy output. But when the researchers looked more closely at an early stage of egg development in fruit flies, they saw something different: the mitochondria were actually fragmenting into smaller pieces. "So instead of being long and tubular, they appear as a series of dots at this particular stage of egg cell development," says Dr. Lehmann, a Howard Hughes Medical Institute investigator. This fragmentation process, she and colleagues found, temporarily splits the megastructures into individual organelles, leaving most with a single copy of the genome. If that DNA is defective and energy production dips, the organelle gets culled. Meanwhile, other mitochondria with healthy energy output survive and propagate before being passed on in the mother's egg.

The same quality-control mechanism is very likely at work in human cells, notes Dr. Lehmann, because its molecules are conserved between flies and humans. That means the machinery might be exploited to help treat mitochondrial diseases. "We don't know where it will lead," Dr. Lehmann says, "but discoveries like this make me so happy and proud because we're learning something entirely new about biology." ■

Because mitochondrial DNA passes directly from mother to child without any genetic reshuffling, it changes very little from generation to generation.



PHOTOS: COURTESY OF BIOSENSE WEBSTER (TOP); ALFRED PASIEKA/SCIENCE PHOTO LIBRARY (LEFT)

PATIENT PERSPECTIVE

Shock, Anxiety, Then Resolve

After a routine mammogram reveals trouble, Long Island councilwoman and Perlmutter Cancer Center patient Erin King Sweeney used her professional advocacy skills to promote the benefits of early screening and detection.

PHOTO: ELLIOT GOLDSTEIN (ABOVE)

EVEN TO HER UNTRAINED EYES, Erin King Sweeney, 46, knew the white spot on the radiologist's screen looked alarming. Sweeney felt dumbfounded by the diagnosis, and not just because she had little family history of cancer, but also because a manual breast exam by her gynecologist three months earlier had raised no suspicions. After a few deep breaths, Sweeney—a mother of two, a Hempstead town councilwoman, an aviation lawyer, and the daughter of US Representative Peter King—drove home from what was supposed to be a routine mammogram to Long Island, without telling anyone but her husband and parents.

A week later, in early December 2018, Sweeney received from NYU Langone's Laura and Isaac Perlmutter Cancer Center one of 268,600 new US breast cancer diagnoses last year. In her case, the diagnosis identified the most common type, hormone receptor positive, fueled by both estrogen and progesterone. "I was overwhelmed," Sweeney recalls. "My first thoughts were, the hell with pink ribbons. I don't want sympathy. I don't want to be a victim."

While she had every reason to be optimistic about a tumor detected before she could even feel it (likely to be stage 1) Sweeney faced a slew of tests, surgery to remove the lentil-size tumor, and radiation to kill any cancer cells remaining in the breast—the standard treatment plan for invasive breast cancer detected early. Sweeney's age—more than a decade younger than average for diagnosis (age 60)—led doctors to look for possible genetic causes. Did she carry a *BRCA* mutation for breast and ovarian cancer like actress Angelina Jolie? "I thought, 'Was this going to be off the rails or manageable?' " says Sweeney. She felt too uneasy to think about the upcoming family vacation to Charleston as she arranged an appointment with the surgeon recommended by several friends and family, Deborah M. Axelrod, MD, director of clinical breast surgery and community outreach at Perlmutter Cancer Center, one of only 50 cancer centers nationwide designated as comprehensive by the National Cancer Institute.

A call that weekend from Dr. Axelrod helped Sweeney see out of the fog. Early contact with newly diagnosed patients, Dr. Axelrod finds, can be extremely beneficial to setting a positive tone to treatment. "My challenge," she says, "is to persuade these otherwise healthy women that being ill is temporary." Cancer might become your obsession for the next few months, she tells them, but it is not your life.

"She gave me tough love," remembers Sweeney. "Dr. Axelrod told me, 'You are not going to die from this. You have a family and a career. You can cry twice a day but no more.' That was exactly what I needed. A kick in the butt! Believe me, with cancer, you can get yourself incapacitated by worry."

Unless they discovered a genetic mutation or that cancer had spread to her lymph nodes, the treatment plan looked straightforward, and her prognosis, excellent. A presurgical MRI, however, revealed a potential abnormality on another region of her breast, so Dr. Axelrod ordered an MRI-guided needle biopsy to check it out. Spending up to an hour in an MRI scanner can be a challenge for anyone, but Sweeney's acute claustrophobia gave her discomfort so severe that Dr. Axelrod had to distract her by singing along to corny Christmas songs from the control room in what Sweeney recalled as a "real vaudeville scene." "I had to try not to laugh," she says, "the situation was so absurd." When that biopsy and genetic tests came back negative, Sweeney felt more intense relief than she anticipated.

Five days after Dr. Axelrod removed the tumor, confirmed as stage 1, in a two-hour outpatient lumpectomy in mid-January, Sweeney announced her diagnosis publicly. "I was really surprised," says Dr. Axelrod. "Patients usually want to know about their 'margins'"—the pathology report on tissue surrounding the tumor—"and whether they face another surgery before they do anything. But she was really comfortable with her decisions and optimistic."

At a Hempstead town meeting, attended by about 300 people and broadcast live on social media, Sweeney shared a sober but also humorous account of her diagnosis and treatment. Early detection can change the trajectory of the life of a woman and her family, she said, and she vowed to support efforts already under way to pass state legislation to fund mammograms for younger women like herself. Her annual mammogram, after all, saved her.

By March, as she completed the 15 radiation treatments with Carmen A. Perez, MD, PhD, assistant professor of radiation oncology, she also finished a half-marathon, making good on Dr. Perez's advice to stay active during treatment. Under the care of Ruth Oratz, MD, clinical professor of medical oncology, Sweeney would need to take the hormone therapy drug tamoxifen daily for the next five years to help prevent a recurrence, but her victory felt real. Sweeney was grateful and newly appreciative of the small things, she says, like a kind word at a stressful time, or the warm pad a nurse puts on your shoulder before you ask. "Believe it or not," she says, "my experience with breast cancer has been a positive one." ■

TO FIND A DOCTOR WHO TREATS BREAST CANCER, visit nyulangone.org/breastcancer or call 646-929-7950.

Dr. Deborah M. Axelrod (at left) not only treated Erin King Sweeney (top), but also helped her cope with her diagnosis.

When Janis Luque met Dr. Rodriguez this spring, he laid out an ambitious surgical plan that quickly won her confidence.

PHILANTHROPY

A GIFT TO RESTORE FORM, FUNCTION, AND FAITH

The Hansjörg Wyss Charity Care Fund eliminates barriers for those in dire need of reconstructive plastic surgery.

JANIS MELISSA LUQUE had all but given up on doctors. As a toddler in her native Bogotá, Colombia, she swallowed a drain cleaner known as Diablo Rojo (Red Devil) that severely damaged her mouth, her esophagus, and her psyche. Twenty-seven years later, even after 50 surgeries, she could barely open her mouth. Eating was a struggle, and the scarring made her feel self-conscious and isolated. "When people see you, the first thing they look at is your face," says Luque, 29, who now lives in Passaic, New Jersey, with her mother and sister.

Frustrated by the results of past procedures, some of which had exacerbated the internal scarring, Luque was reluctant to pursue further interventions. Then one day last year she happened upon a television news show chronicling the face transplant performed on Cameron Underwood by Eduardo D. Rodriguez, MD, DDS, the Helen L. Kimmel Professor of Reconstructive Plastic Surgery and chair of the Hansjörg Wyss Department of Plastic Surgery at NYU Langone. Seeing the extraordinary complexity of Underwood's case, Luque thought, "Maybe Dr. Rodriguez can help me, too."

When Luque met Dr. Rodriguez this spring, he laid out an ambitious surgical plan that quickly won her confidence. But without health insurance, and with only a modest income from a part-time job as a dental technician, she doubted she could afford his help. "They came to our clinic and didn't ask for anything," recalls Dr. Rodriguez. "Her mother just said, 'She doesn't have insurance, but we will do whatever it takes to help her.'"

In that same spirit, Dr. Rodriguez was thrilled to share some good news. Thanks to a recent gift of $15.1 million from philanthropist Hansjörg Wyss—a longstanding benefactor of Dr. Rodriguez's pioneering department—Luque's financial hardship would not derail her care. In April, NYU Langone Health used the gift to establish the historic Hansjörg Wyss Charity Care Fund, one of the few programs of its kind dedicated to providing the highest-quality reconstructive plastic surgery care to underserved, underinsured, and uninsured adults and children. "When you are able to make a lot of money, by luck and with the help of others, I believe you have a duty to give back," says Wyss.

Luque is set to become the first patient to benefit from the fund, as Dr. Rodriguez plans to perform a multitiered reconstructive procedure designed to restore mobility to her face. Over 12 hours, he will operate on the lower jaw to make it easier for Luque to open her mouth. He will remove scar tissue from the internal lining of her left cheek, filling the void with tissue from her left arm. Then, he will connect blood vessels from the graft using microsurgical techniques before repairing her forearm with a second graft taken from her groin.

Patients who require treatment for congenital deformities or those caused by trauma, cancer, or illness are eligible to apply for the fund, which supports travel and accommodations as well as hospital stays, surgeries, and inpatient and outpatient care. Clinicians and administrators evaluate each case individually based on how the patient might benefit and their financial circumstances.

In Luque's case, the approval process was swift. And now, after years of struggle, she will finally receive the care she has been waiting for nearly her entire life. "I've lived with this since age two," she says, "and I've never found the right treatment, until now." ■

FOR INFORMATION ABOUT THE WYSS CHARITY CARE FUND, visit nyulangone.org/plasticsurgery or call 212-263-5207.

The **Hansjörg Wyss Department of Plastic Surgery** is among the few fully accredited academic plastic surgery departments in the US, with a team of specialists who have revolutionized craniofacial reconstruction and draw patients from around the world.

PHOTO: TONY LUONG

PAIN MANAGEMENT

When It Comes to Narcotic Painkillers, New Research Shows Less Is More

NYU Langone orthopedists and other specialists devise an innovative strategy for curbing opioid dependency.

OPIOID ABUSE HAS TRIPLED in recent years, with overdoses of prescription opioids accounting for the deaths of more than 17,000 Americans in 2017. Orthopedic surgeons are the third-highest prescribers of these medications, according to the American Academy of Orthopedic Surgeons. For its part, the Department of Orthopedic Surgery at NYU Langone Health is tackling the epidemic head-on with an initiative that has reduced—and in some cases eliminated—the use of opioids following orthopedic surgery. A study by the Centers for Disease Control and Prevention found that patients face an increased risk of opioid dependency in as few as four days after the first dose. In addition to the risk of addiction, opioids slow healing and cause drowsiness, nausea, and constipation.

"We challenged our divisions to develop a multimodal pain control protocol to minimize or eliminate opioids for each type of orthopedic surgery," explains Joseph Bosco III, MD, the department's vice chair of clinical affairs. "They worked with colleagues in pain management, nursing, and pharmacy to develop an opioid stewardship program patterned after their successful antibiotic stewardship initiative, with the goal of improving outcomes while maintaining patient comfort."

Starting with a pilot project in 2017 that has since extended throughout the Department of Orthopedic Surgery and to other clinical areas at NYU Langone, doctors are helping patients think differently about pain control. "It's all about expectations," says William Macaulay, MD, the Dr. William and Susan Jaffe Professor of Orthopaedic Surgery and chief of the Division of Adult Reconstructive Surgery. "We're getting patients to realize that they're going to feel better without opioids."

At the heart of the issue is the long-standing practice of having patients rate their pain on a scale from 1 to 10. That system essentially encourages patients to assign a high number to their pain level, with the expectation of prescription opioids in return, explains Christopher Gharibo, MD, director of pain medicine in the Department of Anesthesiology, Perioperative Care, and Pain Medicine. "The problem is that there's no context to that number," he says. "Is the pain impairing movement? Is it worse than it was before surgery? Is it tolerable?"

To capture that context, Drs. Gharibo and Macaulay, along with Roy Davidovitch, MD, the Julia Koch Associate Professor of Orthopedic Surgery, reframed "the pain intake"—the conversation with patients about their level of discomfort. Now, instead of citing a number, patients answer a series of questions about their ability to perform basic functions, such as walking, going to the bathroom, and participating in physical therapy. They're also asked how their pain compares to their expectations for how it will be managed, their history of discomfort, and their capacity to withstand the pain until recovery progresses.

In the initial project, Dr. Davidovitch and his colleagues focused on several dozen patients undergoing same-day hip replacement, or arthroplasty, one of the most common adult reconstruction procedures. The same-day discharge group was chosen because such patients tend to be healthy and eager to get back on their feet. The patients were instructed to take a daily dose of acetaminophen, along with aspirin and meloxicam (a nonsteroidal anti-inflammatory), before they reached for tramadol, a mild opioid prescribed in a small quantity. Compared to patients who were prescribed a conventional opioid-based regimen, the group reduced its in-hospital opioid consumption by about 75%, with no significant difference in the pain they reported. The doctors plan to publish the results of a larger study of 650 total hip replacement patients showing similar results in the *Journal of Arthroplasty*.

"We realized that for many patients, what had been causing the most problems was the side effects of the opioids," says Dr. Davidovitch. "By not being able to get out of bed and move around, their recovery tended to be slower." Education is key, he adds. "We instruct patients to take tramadol only if their pain is greater than it was before surgery." ■

4

The number of days of opioid use that can cause a sharp increase in the likelihood of addiction

Staying One Step Ahead of an Evolving Epidemic

With an estimated 1 in 65 deaths in the US deemed opioid-related, NYU Langone's Department of Population Health has launched a new Center for Opioid Epidemiology and Policy to develop scientific evidence on the nature, causes, and consequences of the epidemic. Led by epidemiologist Magdalena Cerdá, DrPH, the center examines, among other issues, whether state-level opioid policy changes can explain recent decreases in opioid overdose rates in certain areas of the US. "This epidemic is constantly evolving," she notes. "While it originated with prescription medications and street drugs, it has become even more deadly because of the influx of potent synthetic drugs such as fentanyl. Our hope is that better insight into the drivers and consequences of this epidemic will create actionable knowledge for policymakers and public health officials to better address the crisis."

ILLUSTRATION: ANDREA MONGIA

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EDUCATION

MEDICINE: A FAMILY AFFAIR

AT GRADUATION ON May 22, Darren Sultan, MD ('19) (far left), says he felt doubly honored. Following a tradition at NYU School of Medicine, he was handed his diploma by family members who are alumni. Joining him on the stage of Alice Tully Hall were his father, Ronald ('73) (center left), a general surgeon in New Jersey; his brother Raymond ('06) (center right), a urologist on Long Island; and his brother Samuel ('09) (far right), a transplant surgeon in Manhattan. Other physicians and surgeons in the Sultan clan who are not NYU alumni include another one of Darren's brothers and a sister, four uncles, two aunts, and more cousins than he can count. Darren, a native of West Orange, New Jersey, recently began a residency in plastic surgery at Northwell Health. Down the road, he's considering a fellowship in microsurgery or hand surgery, both in great demand among undeveloped countries. "I think my interest in blending science and humanitarianism comes from my father," he says. "Practicing in an underdeveloped community for his entire career has been very important to him. He cares a lot about his patients."■

PHOTO: KARSTEN MORAN