

# NOTHING GONNA BREAK MY STRIDE

Five years after brain tumor surgery, Lauren Barbosa is cancer-free, thriving, and benefiting from a nutrition and exercise clinical trial formulated by neurosurgeon DR. LEE TESSLER. PAGE 2



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# FIRST-OF-ITS-KIND CLINICAL TRIAL EXPLORES THE ROLE OF DIET AND EXERCISE IN PATIENTS TREATED FOR A BRAIN TUMOR



Lauren Barbosa, shown at home with some of the foods she had to cut back on to limit her daily intake of carbohydrates to 40 grams, as required by the clinical trial in which she participated.

Photograph by Jonathan Kozowyk

Throughout his 25 years as a neurosurgeon, Lee Tessler, MD, says that something has never sat right with him. “We have 40-year-old patients who enjoyed working out at the gym before they were diagnosed with a brain tumor,” explains Dr. Tessler, chief of neurosurgery at NYU Langone Hospital—Long Island. “Then all of a sudden, we tell them, ‘Don’t exert yourself. You just had brain surgery. You’re undergoing treatment.’ But exercise actually counters some of the side effects of chemotherapy and radiation therapy, including fatigue, anxiety, and muscle atrophy.”

Dr. Tessler, a lifelong nutrition and exercise enthusiast, notes that as researchers learn more about human physiology, they’re finding that a proper diet and regular exercise boost our ability to fight cancer and feel better by maintaining a healthy immune system. “I wanted to prove that patients who had a brain tumor removed could still do the things they did before surgery,” he says.

Turning up scarce information in published studies, Dr. Tessler decided to investigate the topic himself. In 2022, he embarked on an online master’s degree in exercise physiology at the University of Florida, the country’s top-ranked program in the field. The following year, one of Dr. Tessler’s professors suggested that for a research project, he create a hypothetical clinical trial. Eager to apply his new perspective on biochemistry and physiology to design and test a feasibility study, he responded: “How about if I create a real one?”

Thus was born the idea for the first known clinical trial to test whether diet and exercise can improve the quality of life for patients with a high-grade glioma, the most common primary brain tumor. Gliomas, due to their rapid growth and ability to spread invasively throughout the brain like tentacles, are resistant to even aggressive treatment. With their high recurrence rate, high-grade gliomas result in a median survival rate of only 12 to 14 months.



Dr. Lee Tessler, a lifelong nutrition and exercise enthusiast, long ago adopted the same modified Atkins diet he prescribed for the patients who enrolled in his 12-week clinical trial.

JOSHUA BRIGHT

Dr. Tessler recognized, however, that glioma cells have an inherent vulnerability: they rely on glucose as their primary source of energy. He knew that by drastically lowering glucose availability through a modified diet and structured exercise plan, the body would derive energy primarily from fats and proteins rather than carbohydrates. Unable to adapt to the new fuel source, tumor cells dependent on glucose might die. “There’s pretty good evidence,” says Dr. Tessler, “that a low carbo-

hydrate diet starves tumor cells but continues to feed normal cells.”

After obtaining clearance from NYU Langone Health’s Institutional Review Board, Dr. Tessler launched a two-year clinical trial in January 2025. The 15 participants who will ultimately enroll—12 have so far—are patients at Perlmutter Cancer Center, a National Cancer Institute–designated Comprehensive Cancer Center. They have had brain surgery and completed their initial radiation therapy, but most are still undergo-

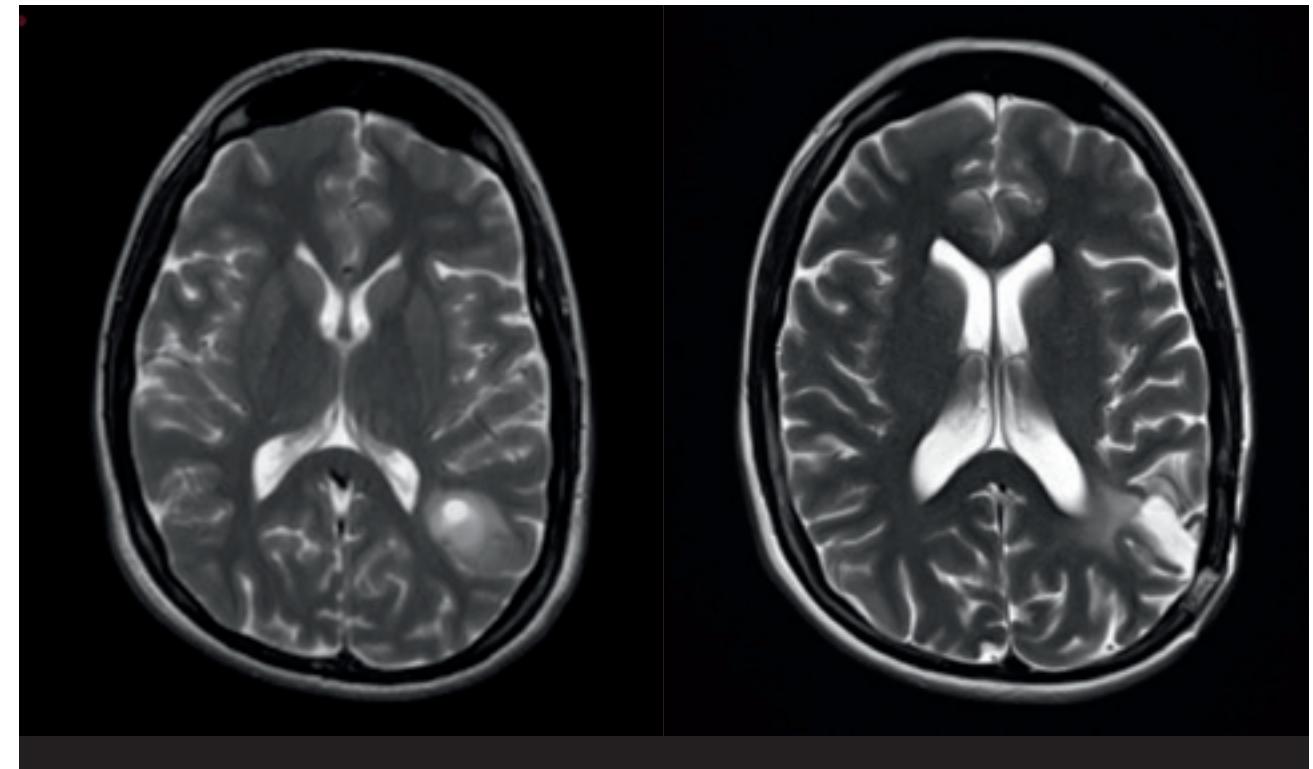
ing some form of treatment.

For a 12-week period, participants follow a strict diet and exercise regimen. A dietician works with each patient to develop food guidelines based on a modified Atkins diet consisting of 60% fat, 30% protein, and 10% carbohydrates, with no calorie restriction but a firm limit of 40 grams of carbohydrates daily. To ensure compliance and confirm that a patient is burning enough fat instead of carbohydrates, a breathalyzer test is performed twice weekly

COURTESY OF DR. LEE TESSLER (TOP); JONATHAN KOZOWYK (BOTTOM)

“Dr. Tessler knows I’m superpositive, and he often tells me, ‘You’re my star now.’ I know how much I’ve overcome, and I’m grateful, so I’m always smiling.”

LAUREN BARBOSA

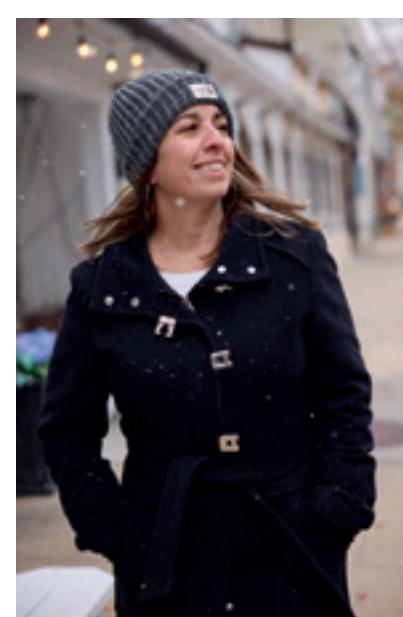


In 2020, Dr. Lee Tessler removed a dime-size glioma from Lauren Barbosa’s brain. The MRI scan on the left shows the circular lesion in white in the lower right. The scan on the right, taken last year, shows no evidence of a recurrence. Below: Lauren Barbosa, shown in downtown Oyster Bay, feels so energetic now that she plans to remain on the strict diet and exercise regimen she followed for the trial.

to measure ketones, a byproduct of fat breakdown.

Participants also follow a structured exercise program, working with a personal trainer twice weekly at NYU Langone Ambulatory Care East Meadow and performing individualized exercises at home. The patient’s fitness level is measured by their resting heart rate, how many seconds it takes to complete a 400-meter walk, and strength assessments using weight machines.

One participant who can already attest to the impact of the trial is Lauren Barbosa, who completed her participation on September 24, 2025. A 43-year-old math coach who supports teachers, Barbosa lives in Bayville on Long Island. She has a long relationship with NYU Langone Hospital—Long Island, where she and her son, Dylan, were born, and where her husband, Leonardo, once worked as a patient transport attendant. In December 2020, Dr. Tessler removed a dime-size tumor from the left parietal lobe of her brain, which controls language and speech. “Dr. Tessler saved my life,” says Barbosa. “He’s an amazing physician, and he



has such a good heart.”

Dr. Tessler notes that participants must have enthusiasm for a trial so disciplined and demanding. “Lauren is incredible,” he says. “She has the motivation and desire to get better.”

December 2025 marked five years that Barbosa has been cancer-free. “Dr. Tessler knows I’m superpositive,” she says, “and he often tells

me, ‘You’re my star now.’ I know how much I’ve overcome, and I’m grateful, so I’m always smiling.”

As a math specialist, Barbosa wasn’t intimidated by the prospect of counting carbs. “I work with data all day long, so I get it,” she says. “I wanted to make sure I did everything right so that Dr. Tessler gets good data for his study.” Barbosa lost weight during the trial and is particularly proud that now she can leg press 274 pounds instead of her initial 190. She feels so much more energetic these days that she’s committed to maintaining the same diet and exercise regimen long-term. Dr. Tessler reports that every single participant thus far has expressed the same desire.

“It’s very important for these patients to feel that they have control over something,” notes Dr. Tessler. “My goal is to prove that people undergoing treatment for a brain tumor can safely participate in physical activities and that by doing so, their quality of life will improve. I hope this one day becomes the new standard of care for every neuro-oncologist and neurosurgeon.”



FOR INFORMATION ABOUT NEURO-SURGERY SERVICES, VISIT NYULANGONE.ORG/NEUROSURGERY, OR CALL 646-929-7800.

The Expert Is In

# BRET J. RUDY, MD, ON HOW NYU LANGONE HOSPITAL—BROOKLYN TRANSFORMED INTO A WORLD-CLASS INSTITUTION

When he took the helm at NYU Langone Hospital—Brooklyn in 2016, Bret J. Rudy, MD, now Executive Vice President and Chief of Hospital Operations, faced a daunting task: how to integrate the former Lutheran Medical Center, a safety net hospital on the verge of closing in a community with the highest concentration of Medicaid recipients in the country, into NYU Langone Health's culture of excellence.

"No one thought we could come in and have the same success that we had in Manhattan," says Dr. Rudy. "But we were determined to bring the same high standard of care to southwest Brooklyn that patients receive throughout our health system."

A decade later, the achievement of that mission is a resounding success. NYU Langone Hospital—Brooklyn, a 450-bed acute care teaching hospital,

In 2022, the nursing staff at NYU Langone Hospital—Brooklyn celebrated the hospital's first Magnet recognition for excellence in nursing.



**"It's all been about bringing quality care closer to home. The more we can do here, from initial visits to treatments to follow-ups, the easier it is for patients."**

**BRET J. RUDY, MD, EXECUTIVE VICE PRESIDENT AND CHIEF OF HOSPITAL OPERATIONS, NYU LANGONE HOSPITAL—BROOKLYN**

boasting an acclaimed Comprehensive Stroke Center and a Level 1 Trauma Center, is now among the safest hospitals not just in New York City, but also in the US. Its key metrics—mortality rate, average length of stay, readmission rate—have all improved dramatically. NYU Langone has invested heavily to recruit top clinicians, install cutting-edge technologies, and expand service lines, most notably cardiac and cancer care. The hospital, located in Sunset Park, now supports a growing number of clinical trials and research initiatives that cater to and recruit from the local community. The nursing staff has achieved Magnet designation, the gold standard for nursing care in the US. What's more, the hospital's reputation has soared. In the last year alone, it's ranking by Vizient, Inc., a leading healthcare performance organization, jumped from #13 to #6 nationwide within the large, specialized complex medical cohort.

However, Dr. Rudy is not resting on this growing list of laurels. "We are continually improving our facilities and technology to provide our patients with the most advanced healthcare in a comfortable environment," he says. "Every change we make is focused on providing better care, tearing down the walls that reduce flexibility and collaboration, and healing our community." Here, he discusses NYU Langone Hospital—Brooklyn's dynamic transformation and the path to continued excellence and improvement.

**What was your vision when you assumed leadership of the hospital, and how has it evolved over time?** Our overall goal was to improve the level of patient care across the board. [Former Dean and CEO] Robert I. Grossman, MD, and [former Board Chair] Kenneth G. Langone were committed to Brooklyn from the beginning, and [current Dean and CEO] Alec C. Kimmelman, MD, and [Board Chair] Fiona Druckenmiller have picked up that mantle.

We brought in physicians who were better aligned with NYU Langone's approach to safe, high-quality

care. Then we studied the neighborhoods and populations we serve to better meet the needs of the community. For example, with our cancer program, we opened Perlmutter Cancer Center—Sunset Park, but then we realized we've got to do more. So we developed a comprehensive, integrated cancer program with disease-specific groups that take care of patients in collaboration. Through philanthropy, we've been able to provide resources for patient navigation, and that has helped patients enrolled in research trials. It's a similar story with cardiac care. We had a good program, but we needed to expand our services to include heart failure, electrophysiology, and cardiac surgery so we could take care of more patients here in Brooklyn. It's all been about bringing quality care closer to home. The more we can do here, from initial visits to treatments to follow-ups, the easier it is for patients. The commute to Manhattan can be burdensome. Not only are these patients ill, but their families must travel, too.

## What defines the culture of the hospital today?

Our staff is incredibly dedicated and engaged. Many of them come from the communities we serve, and speak the same languages as our patients. People who have been here a long time appreciate the resources we've brought to the community. You need technologies to support advanced care, so we've added robotic surgery to every applicable service line. Patients who would've been in the hospital for three to five days now go home the same day or the next day, with a shorter recovery time and less pain. That makes a huge difference, because many of our patients don't get paid if they can't work.

Another defining characteristic is our enhanced collaboration. NYU Langone Heart, which integrates a constellation of clinical services across the institution's seven inpatient locations and more than 70 adult cardiology and cardiac surgery practices, and Perlmutter Cancer Center, an NCI-designated Com-

JOHN ABBOTT (2)



**Dr. Bret Rudy, Executive Vice President and Chief of Hospital Operations, NYU Langone Hospital—Brooklyn**



Dr. Brandon Giglio, director of vascular neurology at NYU Langone Hospital—Brooklyn, confers with Dr. Nada Abou-Faysal, director of the hospital's Multiple Sclerosis Center.



Dr. Ian Wittman, chief of service for the Emergency Department at NYU Langone Hospital—Brooklyn, and his team use the Voyce translation system more than any other unit in the hospital. The service connects patients, their families, and clinicians with a live video interpreter.

prehensive Cancer Center, are great examples of how to bring experts together to build a program, train clinicians, and ensure there's connectivity to our ambulatory care system. Without NYU Langone Heart's co-directors, Dr. Larry Chinitz and Dr. Mathew Williams, we wouldn't have been able to establish a cardiac surgery program. That, in turn, has allowed us to add more procedures to the cardiac catheterization lab. Our strength lies in our integration with a world-class academic health system.

#### How has Epic, our electronic medical record, improved clinical operations?

When we took over, some areas of the hospital were entirely on paper. Some parts were on one electronic medical record, and others were on an entirely different system. If you were treated in our Emergency Department [ED] and went to see your primary care provider the next day, they could not see what care you had received. When the hospital went live with Epic, it was like, Wow! We now have access to all the data instantly, which improves our clinical care and enables us to better

**"When we started, we had 20% higher mortality rates than comparable hospitals. Now, we have among the lowest mortality and infection rates anywhere."**

**BRET J. RUDY, MD, EXECUTIVE VICE PRESIDENT AND CHIEF OF HOSPITAL OPERATIONS, NYU LANGONE HOSPITAL—BROOKLYN**

coordinate with our ambulatory network. Nader Mherabi, executive vice president and vice dean, chief digital and information officer, leads the best health system IT enterprise in the country. The way we're able to utilize the data to continue to innovate care in Brooklyn is just amazing.

#### Sunset Park has a high percentage of foreign-born residents. How has the hospital worked to make healthcare more accessible for these residents?

When you're working with many different ethnicities, you need to meet patients where they are and tailor your care to meet their needs. One critical component has been the Voyce translation system imple-

mented by our Medical Center Information Technology Department. It connects patients, their families, and clinicians with a live video interpreter and covers more than 240 languages and dialects. The service's speed, efficiency, and accuracy improve communication and enhance safety, which leads to better outcomes.

#### What are the most significant advances you've seen in terms of patient care and clinical outcomes?

The reduction in observed to expected mortality rates—a measure comparing the actual number of deaths that occurred in a specific group to the number of deaths that were predicted based on factors like

age, gender, and the severity of illness—has been remarkable. When we started, we had 20% higher mortality rates than comparable hospitals. Now, we have among the lowest mortality and infection rates anywhere. We've also decreased our average discharge time by 23%. Getting patients through the hospital has allowed us to increase volume, and it reduces hospital costs for patients. Readmissions are down significantly, too, in part because we've improved the handoff of patients into the community.

#### Is there a specific change that's had a meaningful impact on patient quality or satisfaction?

I'd point to the ED, the point of

entry for many patients. The ED sees hundreds of patients a day, and it's a challenging environment. You're treating people from varied backgrounds who are dealing with such a variety of illnesses, injuries, and ailments. We changed much of the ED staffing to improve the quality and safety. We brought in new leaders who were aligned with the hospital. They're highly skilled, good at recruiting faculty, have a very strong residency training program, and work collaboratively with all the other services. If you get good care at the very beginning, it leads to great care during hospitalization. We also plan to double the size of our ED, creating a better environment for patients, with more privacy.

**Do you have a favorite anecdote about a grateful patient that epitomizes the improved overall care?** People expect our doctors to be great, and they are. But what they comment on most often is how we make them feel, that we show empathy and speak to them respectfully. They may tell us the surgery went smoothly, but then they'll mention a nurse by name who stood out to

them. Or maybe a kind transporter who took them to a CT scan and made them feel better. It's those brief touches that are 90% of what our patients end up talking about. The fact that our staff shows that they care is where I've seen the biggest impact on the community.

#### Why is the ambulatory surgery center, currently being constructed across the street and scheduled to open in late 2026, big news for the hospital?

Because it will enable us to transfer lower-acuity outpatient procedures from our current ORs to the new facility. This will reduce delays in the ORs and improve the patient experience while allowing us to expand our services. Perlmutter Cancer Center is growing so rapidly that it's going to occupy a floor in the new building, much of it dedicated to breast cancer care. Women can get diagnosis, treatment, and surgery in the same building. We'll also move endoscopy services there and have doctor's offices for critical partners, including Faculty Group Practices and Family Health Centers. No

hospital may be, offering high-quality primary and specialty care is just as critical to health in the community. The Family Health Centers provide great primary and preventive outpatient care and mental health services while the Faculty Group Practices are vital for providing a range of specialists who are accessible to our community.

#### Are other major service line expansions in the works?

We've recently started performing transcatheter aortic valve replacement, or TAVR, a minimally invasive alternative to open-heart surgery. Kidney transplants are scheduled to begin early this year. We will expand into bone marrow transplants and CAR T-cell therapy, critical second-line treatments for a lot of different cancers, headed by Dr. Oscar Lahoud, a national expert in the field and our new chief medical officer. Finally, we plan to keep growing our clinical trials portfolio. We view it as a prime way to improve care.

#### What are your strategic priorities—and opportunities—for the next five years?



**Endocrinology**

# THIS ACTRESS-SINGER HAD PART OF HER THYROID REMOVED. YOU'D NEVER KNOW IT.

Caitlin Zerra Rose first noticed a lump on the left side of her neck in the spring of 2021. She chalked up the slight swelling—along with her thinning hair and swings between deep fatigue and restless energy—to stress. A vocalist and actress in her late 20s, Rose works in theater, film, commercials, and as a singing waitress at a Times Square restaurant, amounting to a fulfilling but demanding livelihood and lifestyle.

By April 2023, the mass had become more prominent, so Rose visited an urgent care clinic to have it examined. An ultrasound revealed an inch-long nodule on Rose's thyroid, the butterfly-shaped gland that secretes hormones vital to regulating metabolic functions, including heart rate, body temperature, sleep, and brain activity. Blood tests showed excessive levels of these hormones, a condition known as hyperthyroidism. When she googled the disorder, Rose learned that treatment sometimes requires an operation. "As someone whose profession depends on my voice and my appearance," she says, "the idea of having surgery on my throat terrified me."

Rose found her way to NYU Langone Health endocrinologist Priya Jaisinghami, MD, an expert on thyroid disorders. After running further blood and imaging tests, Dr. Jaisinghami explained that they indicated Hashimoto's thyroiditis, an autoimmune disease in which the immune system attacks the gland. This can trigger temporary hyperthyroidism, spurring symptoms such as anxiety and hyperactivity. Over time, though, the disease mainly leads to excessively low levels of thyroid hormones, or hypothyroidism, causing a variety of symptoms, including lethargy and depression. It can also induce hair loss. Rose's host of vague ills finally came into focus: they had all resulted, she realized, from these hormonal fluctuations.

**"A visible scar isn't about vanity, but about seeing it in the mirror, reminding patients of the disease, and announcing their private health information to the world."**

**INSOO SUH, MD, DIRECTOR OF  
MINIMALLY INVASIVE ENDOCRINE SURGERY**

Photograph by **Brad Trent**



Thanks to scarless surgery, Caitlin Zerra Rose has nothing to hide. She has also regained her full vocal power with the help of therapy at NYU Langone's Voice Center.

Rose's biopsy came back negative. "We decided that keeping watch on the nodule and her hormone levels was the best approach for the time being," Dr. Jaisinghami says. Hyperthyroidism in thyroiditis is transient, while hypothyroidism associated with Hashimoto's can usually be managed with thyroid hormone replacement medication. Surgery is needed only if a nodule tests positive for cancer (as it does in 5% to 10% of cases) or its molecular genetic profile suggests a possible malignancy.

Once Rose's thyroid hormone levels dropped, Dr. Jaisinghami prescribed thyroid hormone replacement therapy. Yet a bigger challenge arose in May 2024, when an ultrasound showed that the nodule had grown to nearly 1.5 inches long by 1 inch wide. A subsequent biopsy detected mutations suggesting the lesion could be cancerous or pre-cancerous. "That was news I'd been praying not to hear," Rose says.

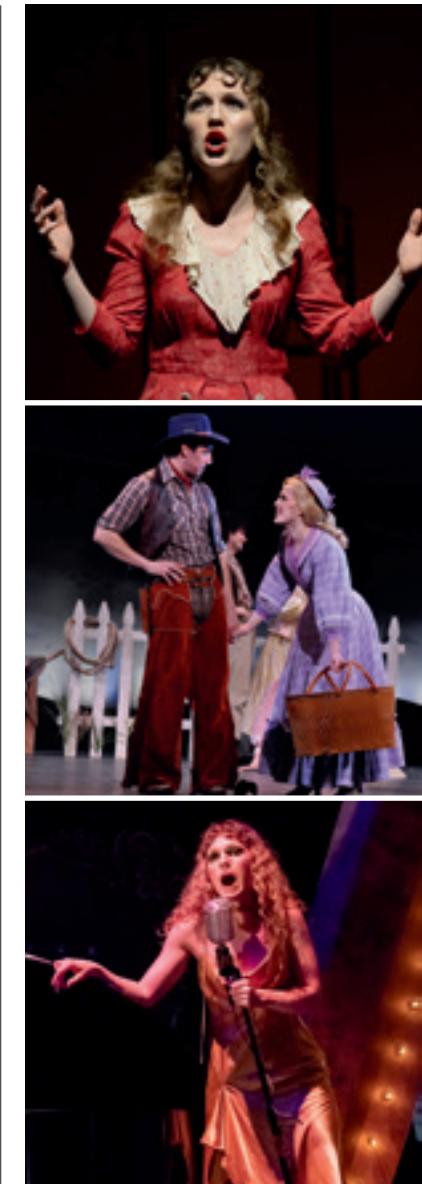
Based on these suspicious findings, Dr. Jaisinghami advised that a thyroidectomy, the surgical removal of all or part of the gland, was the safest course. The next step was deciding whether to opt for a traditional "open" thyroidectomy or a less invasive procedure. When Rose expressed her preference for the latter, Dr. Jaisinghami recommended that she consult Insoo Suh, MD, director of minimally invasive endocrine surgery and vice chair for surgical innovation in the Department of Surgery.

Dr. Suh leads a clinical and research program in "scarless" endoscopic thyroidectomy, an approach that avoids the long mark across the throat left by open surgery. "That visible scar is not a minor concern," Dr. Suh notes. "My patients often say it's not about vanity, but about seeing the scar every day in the mirror, reminding them of the disease, and announcing their private health information to the world." Although thyroid disorders are more common in women than men, he adds, such concerns transcend gender. Minimally invasive



**Top left:** In the pre-op unit, Caitlin Rose wore an ID badge of her own design. **Bottom left:** Before and after photos show the enlarged nodule on Rose's thyroid and the spot under her chin where Dr. Suh made an incision. **Above, top to bottom:** In regional theater productions, Caitlin has performed as Moll in *The Cradle Will Rock*, Gertie in *Oklahoma*, and Fraulein Kost in *Cabaret*. **Opposite page:** After her first biopsy in 2023, Rose displayed an optimism that has served her well throughout her medical journey.

COURTESY OF CAITLIN ZERRA ROSE (7)



approaches are often favored by younger people and those in the performing arts, whose work can be adversely affected by a prominent scar.

Dr. Suh was among the earliest adopters in the US of the first successful scarless technique, transoral endoscopic thyroidectomy vestibular approach (TOETVA). In 2018, he introduced his own innovative method, dubbed transoral and submental thyroidectomy (TOaST), an approach that improves on its predecessor in several important ways. In TOETVA, surgeons make three small incisions behind the patient's lower lip and tunnel down to the thyroid through an endoscopic tube, guided by a tiny camera. The diseased tissue is removed through the middle incision. In TOaST, the central incision is made beneath the chin, reducing the potential for complications, including damage to facial nerves and muscles. Though TOaST does leave a small scar, the inconspicuous location makes it virtually unnoticeable. The position of the incision allows larger portions of tissue to be removed intact, yielding a specimen that is easier for pathologists to evaluate. TOaST also causes less postoperative pain and enables a quicker recovery.

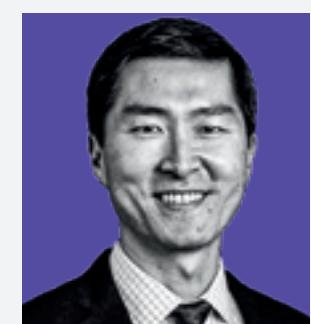
Dr. Suh's technique has been ad-



her restaurant job. By the spring of 2025, after vocal therapy at NYU Langone's Voice Center with speech pathologist Taylor Darden, SLP, her pipes had regained their full presurgical power. She recently launched her own singing troupe, appearing at events across New York City.

Rose's thyroid-related symptoms remain under control, thanks to medications and Dr. Jaisinghami's continued vigilance. "I'm so grateful to everyone at NYU Langone," she says. "They understand that part of my health is living the life I love. What brings me happiness has always been at the forefront of their minds."

## MEET THE EXPERTS



**Insoo Suh, MD**  
ENDOCRINE SURGERY



**Priya Jaisinghami, MD**  
ENDOCRINOLOGY, OBESITY MEDICINE,  
DIABETES

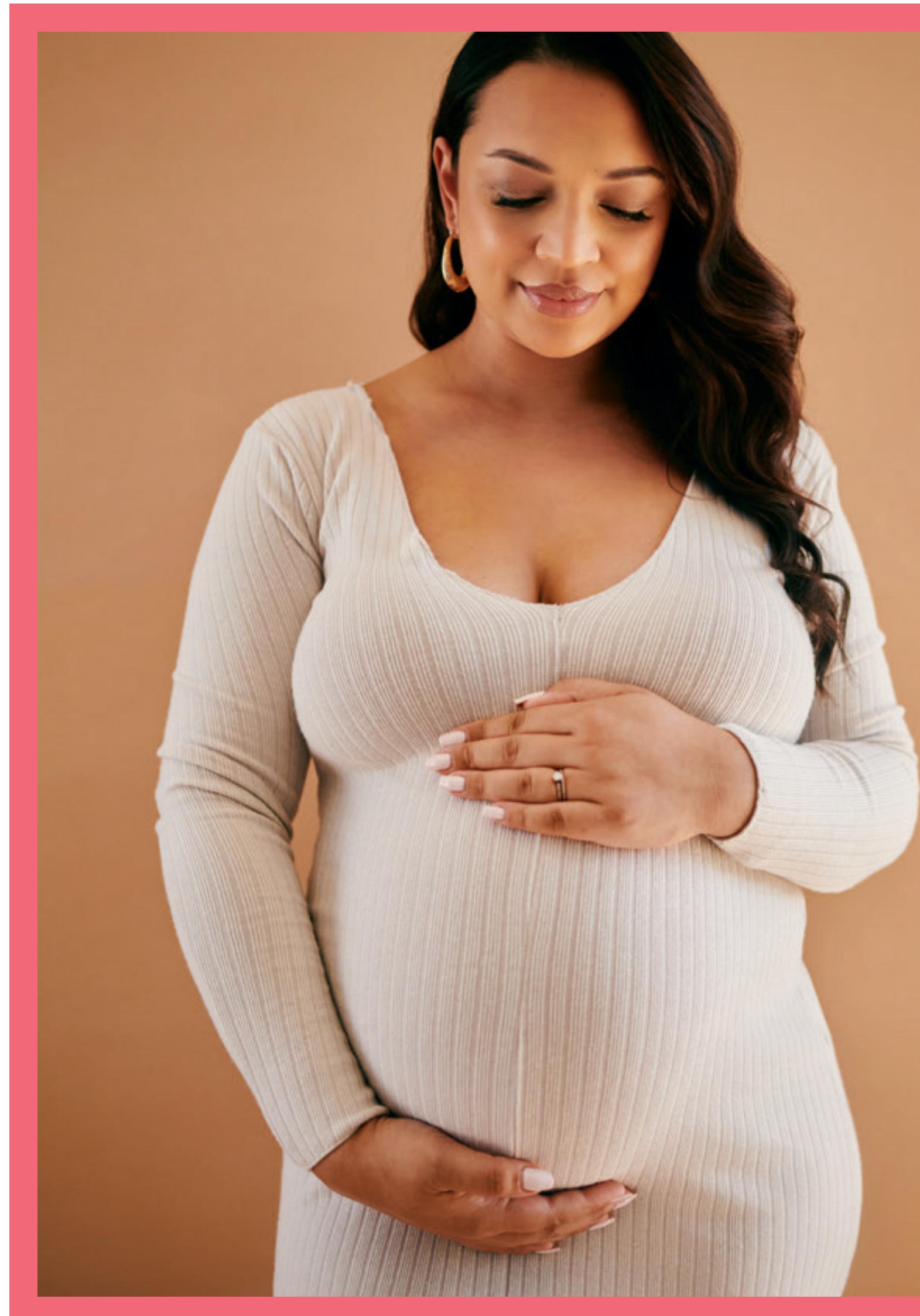
## A LEADER IN NONSURGICAL THYROID TREATMENTS

For some patients with thyroid diseases that can't be managed by medication alone, surgery may be the most appropriate solution. For others, however, nonsurgical interventions offer an effective alternative. NYU Langone's multidisciplinary Thyroid Program was among the first in the US to offer three such approaches. Nanosecond pulsed field ablation delivers electrical pulses to break down large, noncancerous thyroid nodules. Radiofrequency ablation uses heat to destroy these growths. Thyroid artery embolization interrupts blood flow to shrink an enlarged thyroid that protrudes into the neck or chest. "We offer a full spectrum of treatments for people who aren't candidates for surgery or wish to avoid it," says Insoo Suh, MD, director of minimally invasive endocrine surgery and vice chair for surgical innovation in the Department of Surgery. "It's crucial to match each patient with the right approach, based not only on their medical needs, but also on their priorities, goals, and preferences."

opted worldwide, but NYU Langone is among only a handful of health systems in New York to offer it. At their first meeting, Rose was impressed with Dr. Suh's description of the method as well as his kind and reassuring manner. "It felt as if the stars had aligned," she says.

During the two-hour surgery in a Kimmel Pavilion OR on September 30, 2024, Dr. Suh removed the left side of Rose's thyroid. She awoke in a recovery bed and checked her vocal range with a quick glissando; it was unimpaired. "At that moment," she recalls, "a huge weight slid off my shoulders." To her further relief, the pathology report noted precancerous cells rather than a tumor.

Rose returned to her home in Harlem the next day. A week later, she was belting out show tunes at



Maternal-Fetal Medicine

# EXCEPTIONAL CARE FOR COMPLEX PREGNANCIES

Most pregnancies and deliveries are—thankfully—medically uneventful, but when a disease, injury, or genetic condition poses high risk to a mother and baby, complications often require a multidisciplinary team of specialists. For such complex cases, NYU Langone's nationally recognized experts in maternal-fetal medicine provide advanced clinical care and support throughout pregnancy and during childbirth. The patients featured here faced three very different types of health issues: cancer, an autoimmune disease, and an orthopedic injury. But what they all share in common is that their physicians and surgeons collaborated closely to devise solutions, ensure safe care, and surmount challenges that others were unable or unwilling to tackle.

GETTY IMAGES/DELMINE DUNSON

# HOW WE HELPED A PREGNANT MOM DIAGNOSED WITH BREAST CANCER GET SAFE TREATMENT AND DELIVER A HEALTHY BABY



**“She’s beautiful, feisty, and fierce,” Christina Sanz, shown with her husband, Jeremy, says of their baby, Isabella.**

When Christina Sanz found a lump in her right breast during a self-exam in January 2025, she feared not only for her own health, but also for that of her unborn baby. Christina, 32, a small business owner who lives in Yonkers, New York, with her husband, Jeremy, and their 4-year-old son, Grey, had learned she was pregnant just a week earlier. Now, her joy and excitement were tinged with dread: “What if it’s cancer?” she thought.

Though the rate of breast cancer at younger ages is rising more common. The test showed a possible abnormality, leading to a biopsy that revealed early-stage cancer. To Christina’s extreme dismay, another institution declined to treat the disease while she was carrying a fetus, citing a lack of specialized maternal-fetal expertise. “My husband and I had longed for this child,” she says. “Terminating the pregnancy was out of the question.”

Though the rate of breast cancer at younger ages is rising

for reasons that are not clear, the disease occurs in only about 1 in 3,000 pregnancies. When it does, few hospitals possess the teams of specialists needed to ensure a successful outcome for both mother and baby. Fortunately, Christina found her way to NYU Langone Health’s Perlmutter Cancer Center, a National Cancer Institute–designated Comprehensive Cancer Center, which offers a coordinated, multidisciplinary approach to such complex cases.

Christina and Jeremy met with Mary Gemignani, MD, MPH, chief of the Division of Breast Surgery. Dr. Gemignani, director of Perlmutter’s new Early Onset

COURTESY OF CHRISTINA SANZ

many types of chemotherapy can be started at that stage without endangering the fetus.

To oversee Christina’s nonsurgical treatment, Dr. Gemignani teamed up with medical oncologist Elizabeth Comen, MD, a renowned breast cancer researcher and co-director of NYU Langone’s Mignone Women’s Health Collaborative. Dr. Comen ordered a new set of tests on Christina’s biopsy sample. They revealed that the cancer was driven by a genetic mutation that made it vulnerable to a combination of chemo and two targeted therapies, drugs that attack proteins, or pathways, involved in cancer development to

prevent their growth.

Dr. Comen provided emotional support as well, frequently checking in with Christina by phone or email. “Breast cancer is such a traumatic diagnosis—even more so when you’re bringing a new life into the world,” she says. “It’s a privilege to provide tender care during a very delicate time.”

Dr. Gemignani tapped Justin Brandt, MD, director of the Division of Maternal-Fetal Medicine (MFM), who has a particular interest in caring for pregnant people with cancer, to coordinate efforts to battle Christina’s cancer with those aimed at ensuring a safe, successful labor and delivery.

“MFM speaks the language of pregnancy *and* cancer,” Dr. Brandt explains. “We play a critical role in bringing together the care teams on both sides of the equation.”

Christina ultimately chose to undergo a mastectomy. During the weeks leading up to the procedure, Dr. Brandt consulted on the surgical plan and the postsurgical medication regimen. His team performed pre- and postoperative fetal monitoring and observed the operation, performed by Dr. Gemignani on March 19 at Tisch Hospital; it went smoothly. Then, plastic surgeon Jamie Levine, MD, chief of the Division of Microsurgery, completed reconstructive surgery. Christina returned home the next morning and was able to resume normal activities within a few days.

Then came six months of chemo, accompanied by the nausea and fatigue commonly associated with such treatments. Jeremy and both sets of in-laws helped with childcare and errands. “It takes a village,” she says. Despite Christina’s suffering, tests showed that her baby was doing fine.

In late August, Dr. Comen suspended treatment in preparation for the delivery. On September 25, after an obstetrical exam showed that birth was imminent, Christina checked back into the hospital. The next day, with Jeremy looking on, a healthy girl named Isabella entered the world.

“She’s beautiful, feisty, and fierce,” says Christina, who recently completed chemotherapy and remains on targeted drugs aimed at preventing her cancer from recurring. Christina is grateful to the clinicians who gave her and her daughter the chance to live and thrive. “Everyone I’ve met at NYU Langone has been beyond phenomenal,” she says.

“I feel tremendously lucky that I came here.”

## WHEN CANCER STRIKES EARLY

The Early Onset Cancer Program at NYU Langone Health’s Perlmutter Cancer Center coordinates care and services for young people living with all forms of the disease. Launched in 2024, the program reflects a disturbing trend: during the past two decades, the incidence of many types of cancer has been rising in this demographic—especially among young females, whose rates of diagnosis are nearly twice as high as among young males, according to the American Cancer Society.

That statistic is driven largely by breast cancer. About 10% of new diagnoses in the US are among people under 45, and the disease is now the leading cause of cancer deaths in females under 50. However, rates of other cancers are soaring in this demographic, as well. “There are many theories as to why this is happening, including environmental factors, delayed childbearing, and the increasing rate of obesity in the population,” says Mary Gemignani, MD, MPH, the program’s director. “More research will be needed to find the answers.”

NYU Langone offers the region’s only fully integrated, multidisciplinary program addressing cancer among younger people. It connects patients with expert care and resources for coping with breast, gynecologic, colorectal, and other cancers affecting adolescents and young adults. “By streamlining access to an array of support services, ranging from psychological counseling to fertility preservation,” says Dr. Gemignani, “we aim to refine our delivery of care to young patients and enhance their long-term health and quality of life.”

### MEET THE EXPERTS



**Mary Gemignani, MD, MPH**  
BREAST CANCER SURGERY



**Elizabeth Comen, MD**  
MEDICAL ONCOLOGY



**Justin Brandt, MD**  
MATERNAL-FETAL MEDICINE

# SURGEONS ELSEWHERE DECLINED TO REPAIR THIS PREGNANT PATIENT'S TORN KNEE, BUT DR. ABIGAIL CAMPBELL FOUND A WAY

Katharine Johnson was six weeks pregnant in February 2025 when she and her husband, Sean, embarked on a ski trip to Japan. Her obstetrician-gynecologist had assured her there was little risk to the fetus at such an early stage of gestation if she took a tumble on the slopes. But an injury that resulted from such a fall complicated her pregnancy in ways she couldn't have imagined.

On the morning of February 25, Johnson, a 38-year-old digital marketer who lives in Hoboken, New Jersey, took what seemed to be a minor spill on a back-country trail—until she tried to stand up. “I heard a pop, and then a bolt of pain shot up my right leg,” she recalls. She was airlifted to a hospital, where an X-ray indicated a probable tear in her knee. Daunted by the language barrier, she was unable to obtain a more precise diagnosis and opted to wait until she returned home before seeking medical care. The knee hurt only when she put weight on it, so she was able to spend the week sightseeing, aided by a brace and crutches.

When Johnson underwent an MRI at another health system in Manhattan, in mid-March, it revealed two serious problems: a ruptured anterior cruciate ligament (ACL), the band of tissue that connects the thigh bone to the shin bone, and a torn medial meniscus, a wedge of cartilage on the inner side of the knee that acts as a shock absorber and stabilizer between those bones. The first orthopedist she consulted said she would require surgery, but unfortunately, he added, his facility was not equipped to operate on pregnant patients. A second surgeon explained that her medical center’s anesthesia team refused to perform such procedures, deeming the risks to the fetus to be too high. She advised Johnson to wait



Katharine Johnson and her husband, Sean, with their son, Brody, born five months after Johnson's knee surgery.

COURTESY OF KATHARINE JOHNSON

MARLENE NAANES



Dr. Abigail Campbell explained to Katharine Johnson that for knee surgery performed before 20 weeks of gestation, NYU Langone has developed a rigorous safety protocol to avoid general anesthesia.

until after she'd given birth.

For Johnson, an avid runner and skier, the prospect of being sidelined for more than seven months was unacceptable. Moreover, she wondered how she would manage during the remainder of her pregnancy without being able to walk unassisted, and how she would care for a newborn while recovering from knee surgery. “It was so frustrating,” she says. “I called multiple orthopedic surgeons in New York City, but one after another declined.”

Finally, Johnson reached out to Abigail Campbell, MD, at NYU Langone Health, whose Department of Orthopedic Surgery is rated #2 in the nation by *U.S. News and World Report's* “Best Hospitals” rankings. “I left a message describing my situation, not really expecting to hear back,” Johnson says.

Dr. Campbell, though, was eager to help. Before joining NYU Langone in 2023 as director of the Center for Women’s Sports Medi-

cine, she had successfully completed a similar surgery on another pregnant patient. “Although many surgeons are uncomfortable performing orthopedic procedures during pregnancy,” she explains, “research over the past decade has shown they can be done safely.”

Dr. Campbell also had two things in common with Johnson. She, too, was a lifelong athlete who found exercise crucial to her physical and emotional well-being. “As an active person and former college athlete, I have experienced many of the injuries that I manage in the people I care for,” she says. Beyond this, she herself was pregnant at the time. “When Dr. Campbell called me and said, ‘Tell me your story,’ Johnson recalls, “I was so grateful that I broke down in tears.”

After meeting with Johnson and examining her scans, Dr. Campbell concluded that operating promptly was the wisest course of action. “When you have a ruptured ACL, it makes the

knee unstable, which can further damage the articular cartilage and the meniscus,” she explains. “The longer you wait to address this kind of injury, the harder it is to completely fix it.” After discussion with colleagues in obstetrics, Dr. Campbell recommended surgery early in the second trimester. She planned to repair the torn cartilage and replace the ACL with a piece of tendon extracted from an uninjured part of her knee.

To minimize risks to Johnson and her baby, Dr. Campbell reached out to Justin Brandt, MD, director of the Division of Maternal-Fetal Medicine. “We never rush to perform surgery during pregnancy,” notes Dr. Brandt. “But we advocate for it strongly when the risks of *not* doing surgery outweigh those of doing it, and we've developed systems to ensure that it's done safely.”

For procedures performed before 20 weeks of gestation, like Johnson's, NYU Langone's multidisciplinary team has developed a rigorous safety protocol. An anesthetic is injected directly into the cerebrospinal fluid, a procedure known as a spinal block, thus avoiding the risks of general anesthesia. Fetal heart rate is monitored pre- and postoperatively for signs of distress. Because pregnancy increases the risk of blood clots, patients are encouraged to start walking with assistance within hours after surgery.

On the morning of May 14, Johnson was wheeled into an operating room at Tisch Hospital. The three-hour procedure went well, and she was discharged that afternoon. She started rehabilitation at a facility in Hoboken a few days later, and within six weeks,

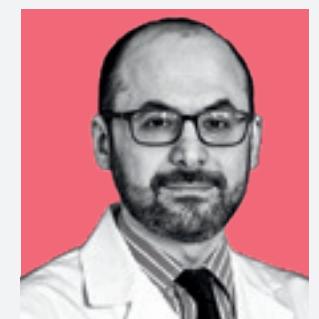
she no longer needed crutches. After her son, Brody, was born on October 3, she carried him easily up the two flights to their apartment. By then, Dr. Campbell's daughter, Louise, was 10 weeks old, and doctor and patient were soon sending each other baby pictures.

Today, Johnson is training for her first 5K race since the accident. She remains grateful to the surgeon who accepted her case when others wouldn't. “After all those doors had slammed in my face, Dr. Campbell's opened,” she says. “I can't say enough about what she did for me.”

## MEET THE EXPERTS



Abigail Campbell, MD  
SPORTS ORTHOPEDIC SURGERY



Justin Brandt, MD  
MATERNAL-FETAL MEDICINE

FOR INFORMATION ABOUT THE CENTER FOR WOMEN'S SPORTS MEDICINE, VISIT NYULANGONE.ORG/WOMENSSPORTSMEDICINE, OR CALL 646-754-3210.

# INNOVATIVE APPROACH TO A HIGH-RISK PREGNANCY HELPS FAMILY DEFY THE ODDS

In the summer of 2024, Kelsey and Dan Kim faced an agonizing decision: whether or not to have another child. They had already lost a son, Arthur, to neonatal lupus erythematosus, an autoimmune disorder caused by maternal proteins called autoantibodies that cross the placenta during pregnancy and attack the fetal heart. These proteins can cause congenital heart block, a condition in which the organ's electrical conduction system is scarred and beats too slowly. Arthur died two years earlier from heart block during the 22nd week of gestation.

During her next pregnancy, in 2023, Kelsey, from Falls Church, Virginia, had been closely monitored and treated by her doctors in Washington, DC. Even so, congenital heart block struck again in the 18th week. "This time, treatment held off the worst of the damage," she recalls. When Abigail was born, though, she needed a pacemaker implanted to improve her dangerously slow heart rate.

A decade earlier, Kelsey had been diagnosed with a mild form of lupus after experiencing rashes under her eyes and joint pain and swelling in her hands. Medication kept those symptoms in check. However, tests revealed the presence of harmful anti-SSA/Ro antibodies, which cross the placenta and in some cases injure the fetal heart. The Kims desperately wanted to expand their family of four, including Abigail, age 2, and her older sister, Ruby, 6, who had another complication associated with the transport of Kelsey's antibodies, a transient, ring-shaped rash. But they were fully aware that another pregnancy could mean more heartbreak.

Ultimately, they decided to hope for the best. During Kelsey's ninth week of pregnancy in November 2024, Angus Worthing, MD, her rheumatologist in Washington, DC, recalled a lecture by Jill Buyon, MD, director of the Lupus Center at NYU Langone Health. His call to Dr. Buyon set in motion a novel test of an experimental drug.

A previous study by Dr. Buyon and colleagues had shown that anti-SSA/Ro antibodies are an essential contributor to congenital heart block, which is fatal in about 20% of cases, but not the entire cause. The findings pointed to a therapeutic strategy Dr. Buyon has long pondered. "Understanding what the antibody is doing in the fetal heart is obviously very important, but what if you eliminated the antibody?" she asks. "This study was born with the idea 'No antibody, no disease.' The concept has been on my mind for 30 years."

Dr. Buyon, the Sir Deryck and Lady Va Maughan Professor of Rheumatology and director of the Division of Rheumatology at NYU Grossman School of Medicine, got the chance to test her hypothesis when, in June 2023, the FDA approved a drug called rozanolixizumab to treat the autoimmune disorder myasthenia gravis. The successful clinical trial for that disease, along with other research, showed that the new medication reduces the IgG antibodies and, importantly, autoantibodies involved in myasthenia gravis. She and her team hoped that the drug would lower anti-SSA/Ro antibodies as well as block their transport across the placenta. When Kelsey volunteered to be the first trial participant to see whether rozanolixizumab might similarly block the antibodies contributing to congenital heart block, Dr. Buyon obtained a compassionate use authorization to treat her.

Every Monday for 14 weeks, starting during her 14th week of pregnancy, Kelsey took the train from Washington, DC, to New York for an injection of the drug. While Dr. Buyon monitored her lupus symptoms, Justin Brandt, MD, director of the Division of Maternal-Fetal Medicine, helped manage her high-risk pregnancy. Kelsey also regularly saw Dr. Worthing and Mary Donofrio, MD, her pediatric cardiologist at Children's National Hospital.

Kelsey had no significant side effects from the drug. With no signs of congenital heart block by Kelsey's 28th week of pregnancy, the clinical team discontinued her weekly injections.

"We were cautiously optimistic once the most vulnerable period passed," says Dr. Brandt, "but we did not fully exhale until the baby was born without heart block or any signs of cardiac neonatal lupus." That good news came on June 10, when Kelsey gave birth to Marigold, a healthy baby girl.

In a recent study published in *Annals of the Rheumatic Diseases*, Dr. Buyon, Dr. Brandt, NYU Langone rheumatology fellow Philip Carlucci, MD, and colleagues described the experimental intervention and successful outcome. Dr. Buyon acknowledges that it's impossible to know whether the result was due to the blocked transfer of maternal antibodies or another reason. Even so, she credits the completion of the landmark study, funded in part by Lauren and Andrew Levison, to NYU Langone's emphasis on translational research, a process that aims to accelerate the journey from the laboratory to patient care. "Our dedication to women's health and helping families grow drove us to take a reasonable risk on a drug that had never been used in a pregnant woman, for a couple that desperately wanted a heart-

healthy child," notes Dr. Buyon.

Dr. Buyon and Dr. Brandt have teamed up with University of Arizona pediatric cardiologist Bettina Cuneo, MD, to test the drug's efficacy on a larger pool of pregnant patients with lupus. The National Institutes of Health recently awarded a \$3.7 million, five-year grant to fund the study.

Kelsey finds it gratifying that her family's experience helped pave the way for a trial that could help others. "Being able to do something that might spare other families from going through what we did is a big deal."

## MEET THE EXPERTS



**Jill Buyon, MD**  
RHEUMATOLOGY

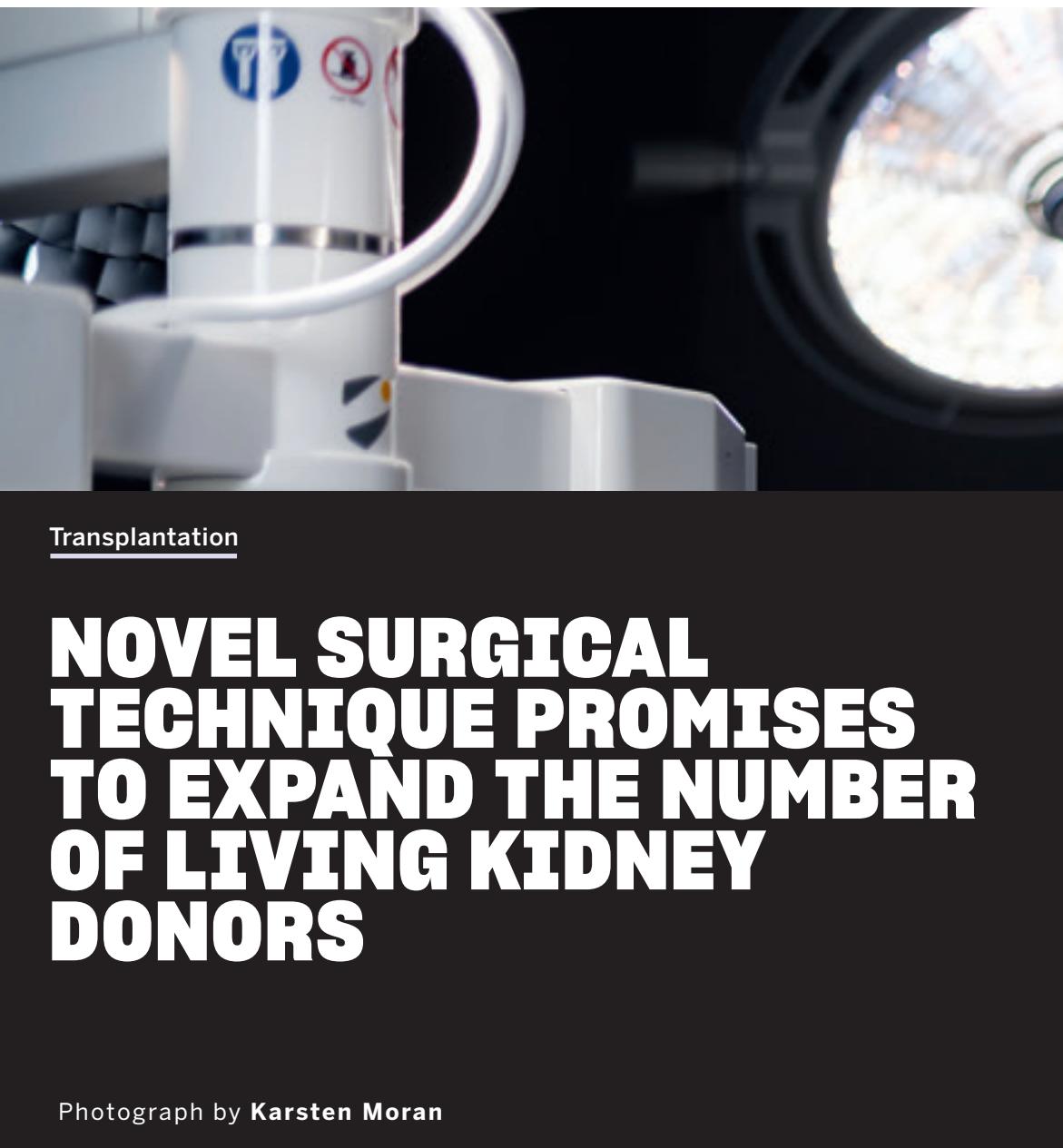


**Justin Brandt, MD**  
MATERNAL-FETAL MEDICINE

JESSIE PIERCE



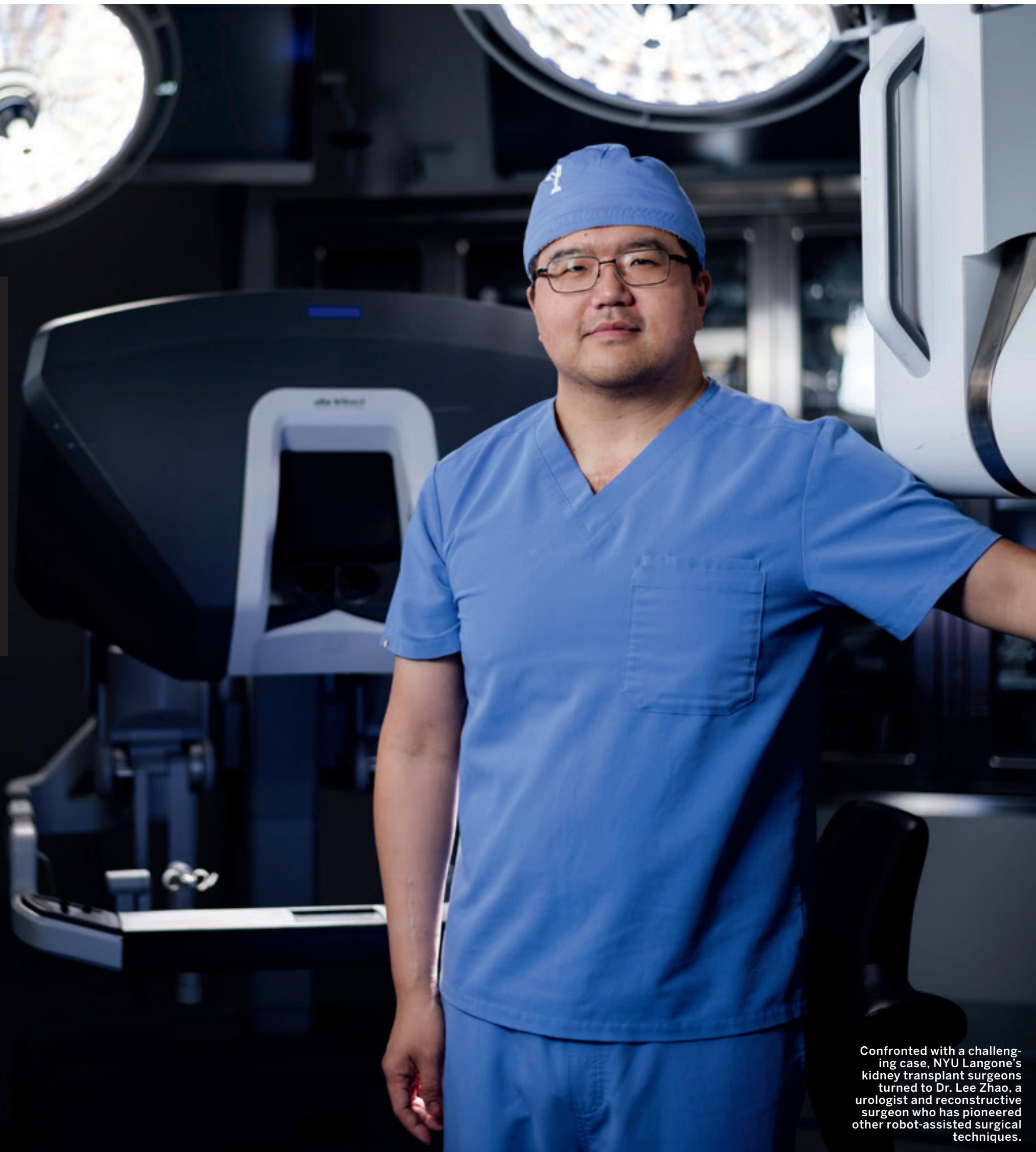
Kelsey Kim with her husband, Dan, and their daughters (left to right) Marigold, Abigail, and Ruby.



Transplantation

## NOVEL SURGICAL TECHNIQUE PROMISES TO EXPAND THE NUMBER OF LIVING KIDNEY DONORS

Photograph by Karsten Moran



Confronted with a challenging case, NYU Langone's kidney transplant surgeons turned to Dr. Lee Zhao, a urologist and reconstructive surgeon who has pioneered other robot-assisted surgical techniques.

By early 2024, Elliot Vargas was long overdue for some good news. The 49-year-old ambulette driver from Brooklyn had been battling diabetes for three decades and, for more than two years, had endured dialysis to manage end-stage kidney disease induced by the condition. Vargas's unrelenting treatment regimen—three days per week, up to five hours each time—put an end to the vacations he and his wife, Natalie Vazquez, 42, often enjoyed in the Caribbean. When his mother, Elfega, died in 2023, he had no choice but to miss her burial in Puebla, Mexico.

A kidney transplant might restore Vargas's quality of life, but before qualifying, he had to undergo several rounds of tests. "With Natalie's support, he never lost hope," says Nicole Ali, MD, medical director of NYU Langone Health's Kidney Transplant Program. "The caregiver plays a vital role because the long, complex transplant journey can take a tremendous mental toll on the patient, just as undergoing dialysis takes a physical toll."

The support that Vazquez, a manager in the mental health field, provided turned out to be even greater than Vargas could have imagined. She pledged to donate one of her kidneys to her husband, and genetic testing determined that she was a strong match. Vazquez's two kidneys, though, were not equal; her left kidney provided greater function than her right one. Typically, a living donor's left kidney is extracted because its renal vein is longer than the right kidney's, making it easier to connect the blood vessels to the recipient's iliac artery and vein. A kidney removal, or nephrectomy, is more technically demanding on the right side due to the shorter renal vein and the kidney's proximity to the liver, a large organ, and the vena cava, the large vessel that returns blood to the heart. But if Vazquez's left kidney were removed, she would be at greater risk for kidney problems in the future. "It's important to make sure kidney donation is as safe as possible for the donor," notes Dr. Ali, "and at the same time to have



While Elliot Vargas was on dialysis, the only trip he and his wife Natalie Vazquez (who would later become his kidney donor) took was to visit family in Florida in July of 2023.

## A LIVING DONOR PROGRAM INSPIRED BY THE KINDNESS OF STRANGERS

The NYU Langone Transplant Institute participates in the National Kidney Registry Voucher Program, established to overcome medical compatibility issues between living kidney donors and recipients. Someone who donates a kidney altruistically (without a designated recipient) receives vouchers for up to five family members or friends. If one of them needs a kidney transplant in the future, they are prioritized for a living donor transplant through the National Kidney Registry. "In the transplant world, we have a saying," explains Nicole Ali, MD, medical director of NYU Langone Health's Kidney Transplant Program. "Mother nature gave us two kidneys so that we could share our spare."

Traditionally, right kidneys have been extracted using a minimally invasive approach with several incisions that involves inserting a thin tube with a camera, called a laparo-

scope, through the peritoneal cavity that surrounds the intestine. Yet this approach risks an injury to the bowel. By contrast, the retroperitoneal procedure devised by Dr. Zhao creates a small workspace behind the abdominal cavity, avoiding the peritoneal cavity entirely. Dr. Zhao makes a single 2.5-inch-long incision—wide enough to insert robotic surgical instruments and a camera that affords a 360° view—in the donor's right flank. "This new technique gives us better access to the renal artery and vein and a direct view of these vessels," Dr. Zhao explains. After dissecting and freeing the kidney, a process that takes about two hours, he removes the

COURTESY OF NATALIE VAZQUEZ

COURTESY OF DR. LEE ZHAO

**"The ability to perform a nephrectomy on either side of the body without compromising outcomes could greatly expand the pool of living kidney donors."**

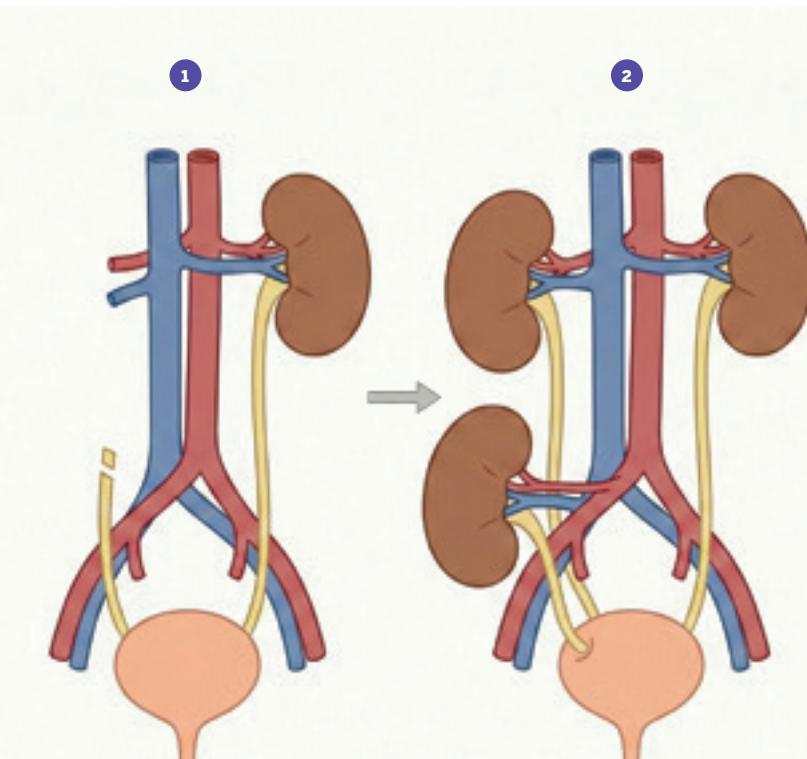
UROLOGIST AND RECONSTRUCTIVE SURGEON LEE ZHAO, MD

organ through the same incision.

On May 20, 2024, Dr. Zhao used the novel approach to extract Vazquez's right kidney. Bruce Gelb, MD, then transplanted the organ into Vargas. Both surgeries were performed at the same time in adjacent operating rooms. On the day before Vargas's final dialysis treatment, Vazquez was preparing goodie bags for Vargas's dialysis nurses when she realized that her husband would no longer need to return to the clinic for treatment. "Tears of joy ran down my face," she recalls. Vazquez went home the next morning, less than 24 hours after surgery, and made a speedy recovery. Vargas spent two weeks recovering in Kimmel Pavilion and was able to resume his job and normal activities within three months. His renal function is now considered excellent, and he is back to traveling. In fact, one of the first trips he made postsurgery was visiting his mother's grave.

NYU Langone is the only health system in New York City that performs single-port, robot-assisted, retroperitoneal, right-side donor nephrectomies, often with same-day discharge. In April 2025, Dr. Zhao described the landmark case at the American Urological Association annual meeting. "The early results have been excellent," he told colleagues. "We believe this technique is both feasible and reproducible." To date, Dr. Zhao has successfully performed the procedure using the single-port technique—assisted by Dr. Gelb and his colleague Jeffrey Stern, MD—on 10 kidney donors, all of whom made rapid recoveries. Transplant surgeons Dr. Gelb and Dr. Stern have increasingly been using the DaVinci robot for left-side kidney donations, as well.

Dr. Zhao's breakthrough may prove transformative. More than 90,000 people in the US are on the wait list for a kidney, but less than one-third can expect to receive a transplant. In 2024, living donors made 6,418 kidney transplants possible; only 16% of transplanted kidneys are extracted from a donor's right side because of the technical diffi-



1. A right donor kidney is removed. 2. Then it is positioned in the recipient's lower abdomen on the blood vessels that go into the leg, where it can easily be connected to the bladder and doesn't compromise nearby organs.

culty of right-side donor nephrectomy and transplantation. Once more surgeons master this robotic procedure, the benefits of a faster, easier, and less painful recovery are likely to encourage more people to become kidney donors. "The ability to per-

form a nephrectomy on either side of the body without compromising outcomes could greatly expand the pool of living kidney donors by including those who would have otherwise been deemed ineligible," notes Dr. Zhao.

## OUR KIDNEY TRANSPLANT PROGRAM EARNED LOCAL AND NATIONAL ACCLAIM

NYU Langone's Kidney Transplant Program is the top program of its kind in New York State, with the highest-quality outcomes and largest volume. Nationwide, it ranks #2, according to data collected by the federally administered Scientific Registry of Transplant Recipients. Surgeons at NYU Langone performed 96 living donor transplants in 2024. The living donor kidney program had 100% organ and patient survival rates after one year—the only one in the nation to achieve that distinction.

### MEET THE EXPERTS



Lee Zhao, MD  
RECONSTRUCTIVE GENITOURINARY SURGERY



Jeffrey Stern, MD  
TRANSPLANT SURGERY



Bruce Gelb, MD  
TRANSPLANT SURGERY



Nicole Ali, MD  
TRANSPLANT NEPHROLOGY

## Complex Cases

# WHEN SEVERE HEART INFLAMMATION THREATENED ELYSSA BYCK'S LIFE, A TEAM OF DEDICATED EXPERTS CAME TO HER RESCUE

In August 2023, Elyssa Byck, then 35, had a mammogram prior to pursuing in vitro fertilization (IVF) at a private clinic. The test showed nothing abnormal in her breasts but detected swollen lymph node in her right armpit. A follow-up biopsy revealed a potentially serious problem, but it wasn't cancer.

The pathology report arrived while Byck and her wife, Jillian, were in Italy. It indicated a probable diagnosis of sarcoidosis, a rare inflammatory disease in which clumps of immune cells called granulomas proliferate in the lungs, skin, and lymph nodes, among other organs. "I'd never heard of it," says Byck, a media executive who works out daily with a personal trainer and felt perfectly healthy. "I thought the results could be a false alarm, but the condition sounded scary. I wanted to get checked out as soon as I got home."

Although mild cases of sarcoidosis may cause no symptoms, the lesions can interfere with normal functions throughout the body, with debilitating and sometimes life-threatening impacts. In most of the approximately 27,000 cases diagnosed annually in the US, the underlying cause remains unknown.

Back in the States, Byck consulted rheumatologist Natalie Azar, MD, whom she'd previously seen about an unrelated condition. "I'd read that the Sarcoidosis Program at NYU Langone was the best," she says. That reputation rests, in part, on NYU Langone's #1 national ranking in cardiology, heart surgery, vascular surgery, and pulmonology and lung surgery, according to *U.S. News & World Report*. NYU Langone's Sarcoidosis Program takes an uncommonly comprehensive approach to treating this complex disorder. "Multidisciplinary coordination is crucial," explains dermatologist Avrom Caplan, MD, the program's co-director. "We bring together specialists in every organ for each patient who enters our care."

Imaging tests ordered by Dr. Azar showed that granulomas were also present in Byck's lungs, so she referred her patient to pulmonol-



Elyssa Byck and her spouse, Jillian, with their daughter Maisie, now 1 year old.

ogist Nathaniel Nelson, MD. Because Byck had none of the classic symptoms of pulmonary or cardiac sarcoidosis—shortness of breath, cough, chest pain, irregular heartbeat, and fatigue—Dr. Nelson thought her case might be mild. Still, he spent an hour making sure he didn't miss any hidden danger signs. "Dr. Nelson went above and beyond in every way," Byck recalls. The final test, an electrocardiogram, brought an unwelcome surprise: Byck had a delay in signals from the upper chambers of the heart to the lower chambers. Though the abnormality is minor by itself, it can point to various cardiac problems.

Dr. Nelson referred Byck to another member of the sarcoidosis team, cardiologist Randal Goldberg, MD, associate director of the Heart Transplant Program. Before the appointment, she underwent an echocardiogram and a cardiac MRI. "When I met with Dr. Goldberg," Byck recalls, "he asked, 'Are you out of breath when you walk down the street?' I said, 'No, doctor, I just did 100 pushups yesterday.'"

Dr. Goldberg's question stemmed from the imaging, which showed scarring throughout Byck's heart. As a result, the portion of blood the heart pumps out with each contraction—typically 50% to 70% in a healthy person—had fallen to 24%. Taken together, the test results pointed to severe cardiac sarcoidosis, a condition that can lead to heart failure, dangerously abnormal heart rhythms, and even sudden death. A subsequent scan showed extreme inflammation in the heart. "Elyssa's continued lack of symptoms may have reflected her superb level of fitness," says Dr. Goldberg. "But a crash was likely."

Dr. Goldberg devised a multipronged treatment approach. He prescribed a high-dose steroid to tame the inflammation and heart-failure drugs to boost the organ's pumping power. He also put Byck on the priority list for an implantable cardiac defibrillator, a device that would reset her heartbeat with a zap of current if it grew



**"Multidisciplinary coordination is crucial. We bring together specialists in every organ for each patient who enters our care."**

AVROM CAPLAN, MD, CO-DIRECTOR OF THE SARCOIDOSIS PROGRAM

too rapid or act as a pacemaker if it became too slow. In the meantime, she wore an external defibrillator strapped to her torso 24 hours a day. "That was the first time I was truly terrified," she says.

Two weeks later, on October 5, 2023, Byck walked into a surgical suite at Kimmel Pavilion, accompanied by Jillian and by her parents, her two sisters, and her sister-in-law. She was greeted by cardiac electrophysiologist Anthony Aizer, MD, co-director of the Cardiac Sarcoidosis Program. Dr. Aizer made a small incision in her chest and threaded two wires through a vein into her heart: one to monitor heart rhythms, the other to correct them as needed. Then, he implanted a pulse generator the size of a deck of cards beneath her collarbone. Byck went home the same day and, within a week, returned to work remotely during her recuperation.

In December, when a scan showed that the inflammation in Byck's heart had subsided, Dr. Goldberg began to wean her from the steroid. By February 2024, after another clear scan, Byck and her spouse felt

confident enough to resume their plan to start a family. This time, it was Jillian who underwent IVF, successfully. The couple's daughter, Maisie, was born in February 2025.

Today, Byck is back to vigorous daily workouts and feels great. She follows up regularly with her care team to ensure that any potential complications are caught early. Sarcoidosis patients may have an elevated risk of skin cancer, for example, and in August, Dr. Caplan found a dangerous melanoma lesion, removed by a dermatologic surgeon.

"We'll be monitoring Elyssa for decades to come," notes Dr. Goldberg. "Our goal is to keep her as well as she is right now."

Meanwhile, Byck is enjoying the adventures of parenthood with Jillian. "I'm so grateful to this incredible team for giving me back my life," she says. "I look forward to being on this journey with them for a very long time."

 TO LEARN MORE ABOUT THE SARCOIDOSIS PROGRAM, VISIT NYULANGONE.ORG/SARCOIDOSISPROGRAM, OR CALL 212-263-7951.

## MEET THE EXPERTS



Natalie Azar, MD  
RHEUMATOLOGY



Avrom Caplan, MD  
DERMATOLOGY



Nathaniel Nelson, MD  
PULMONARY MEDICINE



Randal Goldberg, MD  
HEART FAILURE, TRANSPLANT CARDIOLOGY



Anthony Aizer, MD  
CARDIAC ELECTROPHYSIOLOGY



## Building Trust

# AT NYU LANGONE, EMPATHY PLAYS A VITAL ROLE IN HEALING

“Cure sometimes, treat often, comfort always.”

With each patient, physicians aspire to fulfill these ideals of Hippocrates, widely known as the father of medicine. But empathy doesn’t come naturally or intuitively to every clinician, and it can easily be neglected amid the haste of healthcare.

To help ensure that patients receive healthy measures of compassion and connection along with their exceptional medical care, NYU Langone Health has launched an innovative program to train future and newly minted doctors in the art of understanding a patient’s feelings and sharing their concerns. The Center for Empathy in Medicine, an academic unit within NYU Grossman School of Medicine, under the leadership of Jennifer Adams, MD, the Frankfort Family Director, establishes the school as a global leader in empathy education, research, and scholarship—and provides a model for medical schools and health systems nationwide.

The center was born out of a partnership between the school’s Institute for Innovations in Medical Education and The Empathy Project, founded in 2013 by Jonathan LaPook, MD, the Mebane Professor of Gastroenterology, to promote empathy in medicine. As part of its mission, leaders in medicine, education, entertainment, and technology produce engaging short films that train healthcare providers to deliver highly compassionate care. One video, “Listening,” conveys the message that paying careful attention to a patient—not just hearing them—can be key to making an accurate diagnosis. Another, “The Elephant in the Waiting Room,” shows how empathy can be used to mitigate unintentional bias.

Why is empathy such a priority within our integrated academic health system? Studies show it helps build trust, increases a patient’s engagement in their treatment, boosts compliance, decreases anxiety, and is linked to better outcomes, as well as greater patient satisfaction. “A clinician who practices empathy avoids a knee-jerk dismissal of a patient’s concerns about, say, a new medication, and instead uses their hesitancy as an opportunity to start a thoughtful discussion,” notes Dr. Adams.

Here, in the words of five distinguished clinicians at NYU Langone, are their perspectives on the transformative power of empathy in patient care.



“

**A patient I’ve known for decades walked into my office and greeted me with an exuberant “Hi!” “What’s the matter?” I responded. She burst into tears. Her whole life was falling apart. When she stopped crying, she asked, “How did you know?” “That’s not your normal ‘Hi,’ ” I said. I could tell by her expression how much she appreciated somebody knowing her that well. That moment reminds me that empathy begins with truly listening—not just to what patients say, but to how they say it.”**

**JON LAPOOK, MD, THE MEbane PROFESSOR OF GASTROENTEROLOGY; FOUNDER AND PRESIDENT, THE EMPATHY PROJECT**



“

**When I first meet a patient, that person has never seen me before, yet he or she is willing to put their life in my hands. This is the most vulnerable moment in that person’s life. They are lost, helpless, scared to death. I must treat this person very gently and compassionately. I am not the one assuming the risk. It’s the patient who takes the risk of the surgery. He or she must have courage. I must have conviction and their trust.”**

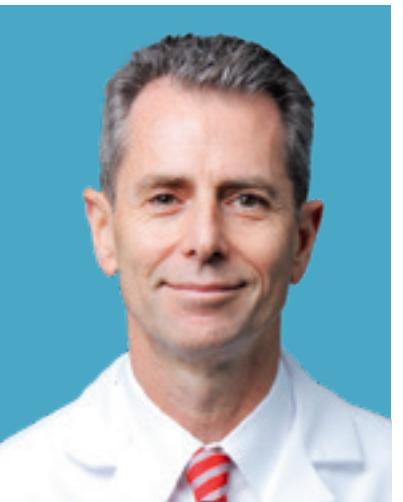
**CHANDRA SEN, MD, THE BERGMAN FAMILY PROFESSOR OF SKULL BASE SURGERY; VICE CHAIR, DEPARTMENT OF NEUROSURGERY; DIRECTOR, BENIGN BRAIN TUMOR AND CRANIAL NERVE DISORDERS PROGRAMS**



“

Hope is the most important factor that gets people through a difficult time. You never take away hope. If you tell someone that they have six months to live, their whole body sets itself to that time period. I'm not talking about false hope. We have to make sure we give hope in the appropriate form and dose. There's plenty to hope for in modern medicine: hope for a cure, a new treatment, comfort care, or at the end of life, peace.”

MARK POCHAPIN, MD, THE SHOLTZ-LEEDS PROFESSOR OF MEDICINE; VICE CHAIR OF CLINICAL AFFAIRS, DEPARTMENT OF MEDICINE; DIRECTOR, DIVISION OF GASTROENTEROLOGY AND HEPATOLOGY



“

As much as I enjoyed practicing pulmonary and critical care for more than 20 years, I switched specialties to palliative care. My focus shifted from helping patients with lung and other diseases recover to helping gravely ill patients move toward a very different goal: improving their quality of life in the setting of terminal illness. My education and experience in this specialty strengthened my empathic skills and ultimately helped me get my own mother, who had advanced dementia, into home hospice. That setting provided the support and medications that allowed her to die comfortably in her home, with me and my sister at her side.”

JOSEPH LOWY, MD, DIRECTOR, PALLIATIVE CARE; LIAISON, MEDICAL ETHICS, TISCH HOSPITAL



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While proper treatment is critical, good doctoring makes a difference, too. I think of my patients as my family, and I would do anything for my family. When I meet with a patient, cancer is usually the last thing we discuss. I try to take their mind off their illness by discussing their joys in life. My goal is to help patients not only live as long as possible, but also with as high a quality of life as possible.”

ABRAHAM CHACHOUA, MD, THE ANTONIO MAGLIOCCO, JR., PROFESSOR OF MEDICINE; DIRECTOR OF STRATEGY AND INNOVATION, PERLMUTTER CANCER CENTER; DIRECTOR, LUNG CANCER CENTER



“

Rehabilitation touches everyone because at some point in their life everyone becomes disabled. I enjoy developing long-term relationships with patients. Very few patients give up on themselves. Despite lingering disabilities, with therapy most not only survive but thrive. Their spirit is inspirational. Nothing is more satisfying than seeing a patient with a traumatic brain injury walk out and go on to become a productive citizen.”

STEVEN FLANAGAN, MD, THE HOWARD A. RUSK PROFESSOR OF REHABILITATION MEDICINE; CHAIR, DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION, RUSK REHABILITATION

JOSHUA BRIGHT



# CRUSADING AGAINST THE HEALTH HAZARDS OF MICROPLASTICS

Each year, the world produces more than 400 million tons of plastic—enough to fill more than a million garbage trucks—and less than 10% of these products are recycled. The rest are stuffed into landfills, strewn across our land, oceans, and waterways, or burned in incinerators that create dioxin, a potent cancer-causing chemical.

Initially, environmental studies focused on the adverse impact of plastic debris on aquatic animals and other wildlife. “But we now appreciate that we’re all suffering the consequences, as well,” says epidemiologist Leonardo Trasande, MD, MPP, the Jim G. Hendrick, MD, Professor of Pediatrics at NYU Langone Health. “Functionally, we all have a Great Pacific Garbage Patch in our bodies.”

Dr. Trasande and other researchers at NYU Langone have taken a leading role in sounding the alarm about the growing health effects of microplastics, the tiny plastic bits we all ingest or inhale, and the pressing need for better preventive measures. In studies, scientists have found tiny shards of microplastics

and nanoplastics throughout the human body, including the brain and placenta, and have shown that they contain a dizzying array of hazardous compounds. Of the roughly 16,000 chemicals used in plastic materials, about 4,000 are known to be toxic, while researchers know little about the potential toxicity of another 10,000.

In a major research review published in *The Lancet Child & Adolescent Health*, Dr. Trasande and two collaborators detailed how early exposure to chemicals in plastic products can reverberate “from cradle to grave,” as he explains. Focused on three classes of chemical additives, the review tied the toxins to a broad range of health risks, including obesity, diabetes, heart disease, neurological disorders, and infertility. “We’re merely scratching the surface of a bigger problem, and yet we have enough information to act with urgency,” Dr. Trasande says.

In a separate recent study published in *Journal of the Endocrine Society*, Dr. Trasande and collaborators concluded that \$250 billion in annual US healthcare costs may be



Dr. Leonardo Trasande specializes in both pediatrics and epidemiology.



attributable to childhood disease and disability linked to chemicals in plastics. In another, published in *eBio-Medicine*, he and other researchers at NYU Langone modeled the global health impact of just one category of plastic chemicals: phthalates, used in personal care products and cosmetics, and to soften vinyl chloride for food packaging. The team concluded that the chemical additive likely contributed to 349,000 deaths annually due to metabolic disruptions in infants that can trigger early cardiovascular disease.

Many plastic chemicals disrupt hormones, the body’s signaling molecules that control everything from brain development to sexual reproduction. Because hormones work at minute concentrations—Dr. Trasande compares them to “grains of salt in an Olympic-size swimming pool”—even small amounts of interference can wreak havoc.

Like phthalates, bisphenol chemicals—used to make plastics

more rigid—can cause a variety of metabolic disorders by mimicking and disrupting the body’s estrogen hormones. Minimally invasive gynecologic surgeon Taraneh Shirazian, MD, director of the Center for Fibroid Care, says recent studies have linked the disruptions to estrogen-driven diseases such as uterine fibroids, endometriosis, and endometrial cancer.

Dr. Shirazian and colleagues recently launched a study to examine whether uterine fibroids, which are on the rise worldwide and can affect up to 80% of women by age 50, contain harmful microplastics and chemicals. “We’re trying to see if we can find correlations between environmental exposure and what we’re observing physically in the body,” she says. “If we can find a correlation with what people are doing in their daily lives, we could help change behavior and prevent disease or disease recurrence.”

A third class of dangerous addi-

tives are the PFAS “forever” chemicals commonly used in nonstick pans and clothing fibers for raincoats, snowsuits, activewear, and swimwear to repel heat, water, and grease. Research suggests PFAS chemicals not only interfere with early growth and development but also contribute to metabolic diseases and testicular and kidney cancers.

In September 2025, the NYU Langone Center for the Investigation of Environmental Hazards, directed by Dr. Trasande, convened the second annual Plastics, Human Health, and Solutions Symposium, a daylong gathering of researchers, environmentally minded companies, advocates, and other experts working toward innovative solutions. One of the biggest takeaways from the symposium is that while plastics research remains in its infancy, scientists already possess enough data

to make a meaningful impact in lowering health risks.

Dr. Trasande says a few simple changes can make a big difference. For instance, people who avoid putting plastic food containers in the dishwasher or microwave, or replace them with glass or stainless steel containers, can significantly reduce their exposure to phthalates and bisphenols. Consumers can lessen their exposure to bisphenols by limiting their consumption of canned foods, since the chemical is a frequent component of can linings. Switching from nonstick to cast iron or stainless steel pans can minimize your exposure to PFAS chemicals. Dr. Trasande also recommends improving the air filtration in your home to reduce exposure to airborne microplastic particles.

Progress on plastics exposure has been slow at the policy level, and

**“Many plastic chemicals disrupt hormones, the body’s signaling molecules that control everything from brain development to reproduction.”**

EPIDEMIOLOGIST LEONARDO TRASANDE, MD, MPP

negotiations of the United Nations’ Global Plastics Treaty, which could cap production, have stalled temporarily. Still, Dr. Trasande points to positive regulatory steps taken by several states, including New York, to better address health concerns linked to plastics.

For healthcare providers, plastics present a paradox. They’re a critical component of lifesaving equipment such as ventilators, IV and feeding tubes, and masks, yet overuse of nonessential plastic items could be

contributing to harmful exposures. Dr. Trasande says health systems need to be part of the solution. To that end, NYU Langone is partnering with nonprofits like Practice Greenhealth and Health Care Without Harm, sustainable healthcare organizations that are promoting environmentally friendly practices. “We can be leaders in protecting our patients in more ways than one,” Dr. Trasande says. “It’s not just about writing prescriptions or doing surgeries. It’s about preventing harm.”

# PINPOINTING NEW CANCER TARGETS FOR THE IMMUNE SYSTEM'S STRIKE FORCE



A few decades ago, patients with metastatic cancer had few reliable treatment options beyond chemotherapy, a treatment regimen that often had limited success and caused significant side effects. Then came immunotherapy, a breakthrough treatment that harnesses the body’s own immune system to fight tumors. It has been a game changer and, in many cases, a lifesaver for patients with advanced melanomas and other cancers.

“Immunotherapy has had a huge impact in fighting metastatic cancers and leukemias when no other treatments have worked,” says Michelle Krogsgaard, PhD, an immunologist at NYU Langone Health’s Perlmutter Cancer Center.

There’s a catch, however. T cells, the “police officers” of our immune system, are mainly responsible for recognizing and killing cancer cells and other threats. To do their job, T cells rely on cell-surface proteins called receptors, which recognize and grab hold of the distinctive flags on the surface of cancer cells, known as antigens. These antigens help the immune system distinguish cancerous cells from healthy cells. Yet deceptive tumors can mutate or hide these flags from appearing outside cells, thus cloaking themselves from T cells and fending off immunotherapy.

In a number of recent studies, Dr. Krogsgaard and her team have made key discoveries about how T cells recognize specific cancer cells by their telltale antigens, how that process can go awry, and how certain antigen features may help the immune system strike tumors more precisely. “We’re hoping to get deep molecular insights into how T-cell therapies work so we can develop treatments that are better, safer, and potentially tailored to each patient,” Dr. Krogsgaard explains.

Checkpoint inhibitor therapy, a common type of immunotherapy, often uses antibodies—immune proteins that recognize and block specific target proteins to prevent cancer cells from binding to and “turning off” T cells and other immune cells, thereby closing off

a critical escape route. When clinicians combined three checkpoint inhibitors, including an antibody targeting a cancer-linked protein called LAG-3, they saw greater responses in patients and fewer side effects. “But no one really knew how it worked,” Dr. Krogsgaard says. “To make these therapies better, you have to understand the mechanism behind them.”

In a new study submitted for publication, Dr. Krogsgaard demonstrated that a second protein, FGL-1, partners with LAG-3 to help cancer cells evade T-cell attacks. Deciphering the basis of that physical interaction and how it triggers an ensuing pathway of signals and evasive actions, she says, could lead to novel cancer targets beyond that initial protein pairing.

Blocking individual cancer proteins one at a time sometimes leads other proteins to take over and thwart the therapeutic effort, much like playing the arcade game Whac-A-Mole. “But if you can find something that targets multiple signaling pathways with shared features, you can hit all of them,” Dr. Krogsgaard says.

The Krogsgaard Lab has already discovered several promising new cancer targets. In a landmark 2023 study published in *Nature Communications*, the team identified an unusual cancer marker: a short piece of protein that carries a tiny chemical tag called a phosphate. This tag, which appears only on the tumor version of the protein, lets T cells clearly recognize and attack the cancer. Dr. Krogsgaard and colleagues believe the finding could point to a broader therapeutic target that would spare unaffected cells. As a proof-of-principle experiment, the lab engineered T cells that recognize the distinctive protein tag. In mice with leukemia, the engineered T cells eliminated the cancer.

In another breakthrough study, published in 2024 in *Nature Communications*, Dr. Krogsgaard and colleagues identified a unique cancer antigen created by a genetic mutation that alters the protein’s configuration. That alteration en-

abled enhanced recognition by the T-cell receptor, thereby boosting the immune response. Concurrent studies published by Dr. Krogsgaard and collaborators used highly sophisticated biophysical and imaging techniques to show that mechanical forces and the natural movement of proteins in the cell membrane affect how the T-cell receptor grips and flexes. Those movements, in turn, help activate T cells without changing what they recognize.

“We can use this combined knowledge to design cancer cell antigens that are more recognizable and elicit efficient T-cell responses,” Dr. Krogsgaard explains. “This approach could lead to safer therapies by boosting receptor interactions without manipulating them directly.”

Recently, the Pew Charitable Trusts gave Dr. Krogsgaard and

fellow NYU Langone cancer biologist Richard L. Possemato, PhD, a prestigious Innovation Fund award to support their efforts to understand how limited nutrients in tumors weaken T cells’ cancer-fighting ability. Dr. Krogsgaard’s lab is also working closely with clinical and pharmaceutical partners to improve the selection of cancer drug targets by identifying antigens that provoke the best T-cell response.

“Our approach is unique. We invest heavily in understanding what differentiates a good tumor antigen from a bad one by studying the underlying mechanisms,” Dr. Krogsgaard says. “We also collaborate closely with clinicians and oncologists to test patient samples. If we find something useful, they can translate it directly to patients as therapeutics.”



## THE EXPLORATIONS THAT INSPIRE OUR TRAILBLAZING SCIENTISTS

Dr. Michelle Krogsgaard’s cutting-edge work to improve immunotherapy treatments is highlighted in the video series *Behind the Breakthrough: NYU Langone Researchers Tell Their Stories*. Each episode describes the personal inspirations and pivotal discoveries fueling NYU Langone Health’s lifesaving mission. By sharing these stories from leading scientists, the series illuminates how key moments and experiences can spark world-changing research. Scan the QR code to watch it.



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