Los Angeles is home to many of the nation’s best healthcare practitioners and centers of excellence and this is our annual opportunity to shine a light on some of the finest.

For our Top Doctors profiles this year, we analyzed each of the many nominations received and pulled a few particularly outstanding medical professionals each from a broad array of disciplines of focus: Cardiology; Colon & Rectal; Ear, Nose & Throat; Emergency Medicine; Endocrinology; Family Medicine; Gastroenterology; General Surgery; Infectious Disease; Internal Medicine; Nephrology; Neurology; Obstetrics & Gynecology; Oncology; Ophthalmology; Orthopedics; Pediatrics; Plastic/Reconstructive; Psychology/Behavioral Health; Pulmonology; Radiology; Rheumatology; and Urology. Doctors were selected based on their good standing, reputation, thought leadership and success here in Los Angeles.

Methodology: The professionals featured in these pages did not pay to be included. Their profiles were drawn from nomination materials submitted to the Los Angeles Business Journal. Those selected for inclusion were reviewed by the editorial department and chosen based on a demonstration of impact made on the profession and on the Los Angeles community.
and clinical teams. His vast knowledge of CT surgery continues to be foundational as he continues to advance care solutions with fellow specialists and clinical teams.

SUNNY BHATIA
CARDIOLOGY
CEO, Region I and Corporate Chief Medical Officer
Prime Healthcare

Drs. Sunny Bhatia, MD, MMM, FACHE, FACC, FSCAI CEO of Prime HealthCare Region I and corporate chief medical officer, is an interventional cardiologist who is quadruple board certified in internal medicine, cardiovascular disease, nuclear cardiology and interventional cardiology. He is a fellow of the American College of Healthcare Executives, American College of Cardiology, and the Society for Cardiac Angiography and Interventions. Under Dr. Bhatia’s leadership, Prime HealthCare’s hospitals and particularly its Region I hospitals have earned unprecedented accolades for quality, patient safety and performance from nationally recognized healthcare rating agencies. Dr. Bhatia ensures that Prime’s hospitals and physicians are aligned in their goals of providing safe and high-quality care at lower cost.

RAVI DAVE
CARDIOLOGY
Director of Interventional Cardiology
UCLA Health

Dr. Ravi Dave is an esteemed cardiologist who has been at UCLA for more than 20 years and maintains a high-volume procedural practice. His clinical expertise encompasses percutaneous coronary interventions using all devices, treatment of chronic total occlusion of coronary vessels, complete revascularization in high-risk indicated patients, the MitralClip procedure and percutaneous treatment for peripheral artery disease. His research interests include arteriosclerosis, myocardial infarction, valve disease, peripheral arterial disease and coronary and high-risk coronary intervention procedure (CHIP). Dr. Dave is highly regarded as a thought leader and key opinion leader in the field of cardiology.

HOSSEIN DEHGHANI
CARDIOLOGY
Internal Cardiology
Adventist Health Glendale (Affiliated)

Dr. Hossein Dehghani is an experienced interventional cardiologist performing complex cardiac procedures and extremely compassionate physician who goes above and beyond for his patients. Now based in Glendale, Dr. Dehghani completed a residency at Beth Israel Deaconess Medical Center. He currently practices at Everlast Cardiology and is affiliated with Adventist Health Glendale. He accepts multiple insurance plans, including Medicare. Dr. Dehghani is board certified in interventional cardiology.

Prime Healthcare

UCLA Health

AdventistHealth
Glendale

PIH Health

John de Chantal
Glendale
Prime Healthcare

Ravi V. Matthews
CARDIOLOGY
Professor, Clinical Medicine
Keck School of Medicine of USC; Director, Interventional Cardiology and Cardiac Cath Lab
Keck Medicine of USC

Drs. Sunny Bhatia, MD, MMM, FACHE, FACC, FSCAI, CEO of Prime HealthCare Region I and corporate chief medical officer, is an interventional cardiologist who is quadruple board certified in internal medicine, cardiovascular disease, nuclear cardiology and interventional cardiology. He is a fellow of the American College of Healthcare Executives, American College of Cardiology, and the Society for Cardiac Angiography and Interventions. Under Dr. Bhatia’s leadership, Prime HealthCare’s hospitals and particularly its Region I hospitals have earned unprecedented accolades for quality, patient safety and performance from nationally recognized healthcare rating agencies. Dr. Bhatia ensures that Prime’s hospitals and physicians are aligned in their goals of providing safe and high-quality care at lower cost.

David Shavelle
CARDIOLOGY
Medical Director, Adult Cardiology & Interventional Lab; Co-Medical Director, Adult ECMO Memorial Heart & Vascular Institute
Long Beach Medical Center

Dr. David Shavelle is a valued interventional cardiologist who has expanded and grown the heart failure, structural heart, and cardiac research programs since joining the MemorialCare Heart & Vascular Institute at LBMC in 2021. Dr. Shavelle’s predecessor speaks to his extensive experience and research in interventional cardiology. Recent accomplishments include offering the MitraClip procedure to treat patients with mitral regurgitation and providing five interventional cardiologists in the greater Long Beach area, and developing the protocol IRB protocol for Los Angeles County based ECMO pilot to test use of mechanical CPR for cardiac arrest at four leading hospitals, including Long Beach Medical Center.

Karol Watson
CARDIOLOGY
Director of the UCLA Women’s Cardiac Health Center and the UCLA-Barbara Sinatra Women’s Heart Health Program
UCLA Health

Dr. Karol Watson is a nationally recognized leader in women’s heart health. She is an attending cardiologist and a professor of medicine/cardiology at the David Geffen School of Medicine at UCLA. She is also a principal investigator for several large National Institutes of Health research studies, including the Diabetes Prevention Program Outcomes Study and the Multi-Ethnic Study of Atherosclerosis. In September 2022, it was announced that Dr. Watson, along with her colleague Dr. Pei Pei Ping, will lead the Skills & Workforce Development Core of the UCLA Bridge to Artificial Intelligence (Bridge 2AI) Program.

Katrine Zhiroff
CARDIOLOGY
Cardiovascular Disease, Internal Medicine and Interventional Cardiology
PIH Health

Katrine Zhiroff MD is a board-certified interventional cardiologist specializing in heart disease in women, coronary artery disease, coronary artery angioplasty and stenting, peripheral vascular disease and heart failure. Dr. Zhiroff has been practicing medicine for over 10 years, and values the importance of understanding patients’ challenges to provide them with the best treatment. Dr. Zhiroff serves as department chair of Cardiovascular Services at PIH Health. In this role, she has developed strategies for expansion of complex coronary intervention and structural heart disease services in the region, including market research, marketing and strategy. She also established a vascular referral program and helped optimize resource utilization for cardiovascular services.
It takes the best doctors to turn hope into reality.

Congratulations to City of Hope’s “Top Doctors” of 2023.

City of Hope congratulates Yuman Fong, M.D., Lesley Taylor, M.D., and Ravi Salgia, M.D., Ph.D., for being named among Los Angeles Business Journal’s “Top Doctors” of 2023. It is through your work, and the work of others like you, that we are able to bring the cancer cures of tomorrow to patients today.

CityofHope.org
LEADERS OF INFLUENCE: LA’s TOP DOCTORS

JOONGHO SHIN
Colorectal Surgery Specialist
Keck Medicine of USC

Dr. Joongho Shin has spent countless hours in the emergency room, taking care of COVID patients at the ER. Dr. Shin has been active in the Korean and African-American community to share the information about young age onset colorectal cancer. Dr. Shin has been serving the surrounding community for over 10 years. He has mentored medical students, undergraduate students, as well as surgery residents and has been recognized as teacher of the year twice.

SYLVIA KOTIKIAN
Colorectal Surgery Specialist
Keck Medicine of USC

Dr. Sylvia Kotikian is the director of Colorectal Surgery at Keck Medicine of USC. She has been serving the surrounding community for over 10 years. She successfully managed Adventist's emergency room during the most difficult time of the pandemic and she was able to help the entire hospital and administration to establish lifesaving protocols and to bring the best treatments available for COVID patients at the ER. Dr. Kotikian has spent countless hours in the emergency room, taking care of COVID-19 and other patients.

DINESH CHHETRI
EAM, Meso and Throat
Keck Medicine of USC

Dr. Dinesh Chhetri is known nationally and internationally as an academic laryngologist and head and neck surgeon. He currently serves as vice chair of the UCLA Department of Head and Neck Surgery. He is also the director of the UCLA Swallowing Disorders Program and the UCLA Head and Neck Cancer Survivorship Program. He is the co-director of the laryngology program. He specializes in voice disorders, swallowing disorders and airway (breathing) disorders. He has authored nearly 100 publications related to voice and swallowing disorders. He has been consistently funded by the National Institutes of Health for his research in the topic of neuromuscular control of the larynx and voice disorders.

NIELS C. KOKOT
EAM, Meso and Throat
Keck Medicine of USC

As an academic head and neck surgeon, Dr. Niels Kokot’s career focuses on three pillars: patient care, education, and research. He has distinguished himself in the areas of patient care and education. Over the last 15 years, he has built a busy practice that focuses on providing tertiary care to patients with benign and malignant tumors of the head and neck. He prides himself on being able to provide care to patients with the most advanced disease, with the most medical comorbidities who are not able to receive care elsewhere for their cancers.

MAIE ST. JOHN
EAM, Meso and Throat
Keck Medicine of USC

Dr. Maie St. John is a professor and the Thomas C. Calculteria, MD Chair in Head and Neck Surgery. She co-directs the UCLA Head and Neck Cancer Program. Dr. St. John’s laboratory studies the mechanisms of tumor progression and metastasis in head and neck cancer and seeks to identify and study novel genes and pathways for future targeted therapies, while actively incorporating the results of their laboratory-based research into the development of novel therapeutics. Her extramurally funded research portfolio includes multiple National Institutes of Health grants bridging basic science with clinical research and service.

VERONICA VASQUEZ-MONTEZ
Emergency Medicine
Keck Medicine of USC

Veronica Vasquez-Montez, MD has been with the Department of Emergency Medicine at Keck since 2009, first as a resident in training, then chief resident, and finally as a faculty member. She previously served in various administrative roles at LAC USC Medical Center as an attending physician. As the medical director of the Emergency Department at PIH Good Samaritan Hospital, her leadership skills proved to be critical during the COVID-19 pandemic. Without a chief medical officer at the time, she led the COVID-19 response for the entire hospital. For this work, she was awarded the Community Hero Award by the Los Angeles Boys & Girls Club in 2021.

CHRISTIAN GASTELUM
Endocrinologist
PIH Health

Christian Gastelum MD is a board-certified endocrinologist who specializes in diabetes and metabolism. He is fellowship-trained to perform routine thyroid ultrasound and biopsy. When he started at PIH Health in 2009, Dr. Gastelum developed the glucose management team (GMT) and has since been the director of the inpatient GMT. He also served as the endocrine medical director from 2009-2018. Dr. Gastelum taught as an associate professor of medicine for Loma Linda University Medical School from 2008 until 2015. Dr. Gastelum, who is fluent in Spanish, has also appeared as a medical expert on Univision to address topics including diabetes care, asthma, teen steroid use and obesity.

ANTHONY HEANEY
Endocrinologist
PIH Health

Dr. Anthony Heaney is an associate professor at the David Geffen School of Medicine at UCLA. His primary areas of clinical and research interest involve the pathogenesis of pituitary tumors and the exploration of novel molecular targets to develop innovative treatments for pituitary tumors and other neuroendocrine tumors. He has written articles for peer-reviewed publications as the Journal of Clinical Investigation, Nature Medicine, Clinical Endocrinology and Pituitary. He has compiled chapters for Baillieres Clinical Endocrinology and Metabolism and the Oxford Textbook of Endocrinology and Endocrine Updates. Dr. Heaney also serves as a reviewer for the Journal of Clinical Investigation, Cancer Research and Journal of Clinical Endocrinology & Metabolism.
UCLA Health congratulates Los Angeles Business Journal TOP DOCTORS RECIPIENTS as well as all of our physicians for being leaders in care delivery.

Dinesh Chhetri, MD
Head & Neck Surgery

Timothy Cloughesy, MD
Neurology

Ravi Dave, MD
Interventional Cardiology

Jennifer Grossman, MD
Rheumatology

Anthony Heaney, MD
Endocrinology

Kirk Hou, MD, PhD
Ophthalmology

Alice Kuo, MD
Internal Medicine-Pediatrics

Carol Mangione, MD
Internal Medicine

Susanne Nicholas, MD, MPH, PhD
Nephrology

Anjay Rastogi, MD, PhD
Nephrology

David Sayah, MD, PhD
Pulmonology

Stephanie Smooke Praw, MD
Endocrinology

Maie St. John, MD, PhD
Head & Neck Surgery

Karol Watson, MD, PhD
Cardiology

WHERE DISCOVERY LEADS TO WORLD-CLASS HEALTH CARE
LOS ANGELES BUSINESS JOURNAL – CUSTOM CONTENT

MACTAB SOHREVARDI
Endocrinologist
Huntington Health Physicians

Under the duress of COVID-19, Dr. Edelstein created new ways to communicate and work with the medical staff and that of Cedars-Sinai’s leaders, and she felt the impact of many other doctors and specialists as part of the Huntington Medical Foundation medical group.

JOHN C. KOUMAS
Family Medicine Specialist
Emanate Health

Dr. John C. Koumas, DO, is a board-certified family medicine physician and has served as the chair of the Department of Family Medicine for Emanate Health Medical Center for multiple years. He has also served as a member of the Emanate Health Medical Center Medical Executive Committee, which plays an integral role in quality and quality improvement, oversight of medical staff effectiveness and efficiency, and key decision-making.

CHAO ANGEL YEN
Family Medicine
PIH Health

Chao Yen MD is a board-certified family medicine physician. She joined PIH Health after her residency and has been with the organization for over 10 years providing exceptional patient-focused care. An exceptional PIH Health physician leader, Dr. Yen serves on various committees within the organization contributing to its evolution and growth. During the first year of the COVID-19 pandemic, Dr. Yen served on the COVID-19 Workforce and Trimming Emergency Committee, the Telehealth Clinic Pilot Committee, the Physician Burn Out Committee and the Task Reduction Committee. She is also involved in the organization’s APAC Committee, the Electronic Medical Records Optimization/Information Technology Committee, and the Women in Medicine Committee.

MARC EDELSTEIN
Gastroenterologist
Immediate Past Chief of Staff at Cedars Sinai Medical Center

Marc Edelstein, MD, FACEP, FAGG, AGAF, FASGE is a highly acclaimed gastroenterologist and is recognized as an expert in the diagnosis and treatment of digestive disorders and the performance of endoscopic procedures. He completed his fellowship in gastroenterology at UCLA Medical Center in 2001. Dr. Edelstein joined the medical staff of Cedars Sinai in 2003, where he now serves as chief of staff. Under the duress of COVID-19, Dr. Edelstein created new ways to communicate and amplify the outstanding work of his medical staff and that of Cedars-Sinai’s leaders, and as a result, medical center communications will continue to evolve well beyond COVID-19.

RENEE PALTA
Gastroenterologist
PIH Health

Reene Palta DO is a board-certified and fellowship-trained gastroenterologist. She has been practicing medicine for over 16 years and is trained in gastroenterology and hepatology. Her clinical interests include inflammatory bowel disease, gastrointestinal and liver diseases, nutrition, pancreatic diseases and colon cancer screening. She performs procedures such as endoscopy, colonoscopy and endoscopic retrograde cholangiopancreatography, video capsule endoscopy, feeding tube placement (PEG) and Fibroscan. She is an expert in all areas of digestive and liver treatment and excels at making complex conditions easy to understand for her patients, working with them to formulate sound treatment strategies and build long-lasting relationships.

GEOVORG MUTAFYAN
General Surgeon
Advocate Health Glendale (Affiliated)

Dr. Gevorg Mutafyan, a surgeon affiliated with the California Surgical Multi-Specialty group, is the only robotically trained bariatric and general surgeon whose expertise is well regarded by his peers throughout the medical community. Dr. Mutafyan has also fellowship-trained with world famous bariatric experts at Duke University Medical Center. He has performed many of the most difficult revisional surgeries including complicated re-do Roux-en-Y gastric bypass, vertical sleeve gastrectomy, and adjustable gastric banding (Lap-Band, Realize) procedures. He is also the author of many peer-reviewed scientific journals. Dr. Mutafyan has volunteered and participated in life-saving medical mission trips to Armenia.

ELIZABETH HUDSON
Infectious Disease Physician
Kaiser Permanente SCPMG (Southern California Permanente Medical Group)

At Kaiser Permanente, Dr. Elizabeth Hudson has served as the president of the physicians staff, and is also a recipient of the Leonard Cohen award for outstanding physician achievement and service to the medical center. To Hudson, “turning the corner” means that as a global community we are looking toward a better collective future as we continue to live with and battle COVID-19 and other geopolitical changes. Hudson and her team in the Infectious Disease Department at Kaiser are a cohesive group. They strive to provide quality care while maintaining a personal approach and care for a wide variety of patients with both acute and chronic infectious diseases.

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PIH Health Congratulates Our Top Doctors

Adrian Burgos MD – Neurology
Deep Dudeja MD – Ophthalmology
Christian Gastelum MD – Endocrinology
Brent Gray MD – Obstetrics & Gynecology
Andrew Luu MD – Orthopedics
Renee Palta DO – Gastroenterology
Chiao Angel Yen MD – Family Medicine
Gerald Yoon MD – Urology
Katrine Zhiroff MD – Cardiology
Dr. Ashwani Bhardwaj MD is an award-winning internal medicine specialist who serves patients at Barlow Respiratory Hospital Van Nuys location at Valley Presbyterian Hospital. He is board certified in internal medicine, hospice care and palliative medicine. Selected for B.K. Sikand Memorial Gold Medal and R. Vishwanathan Prize for Outstanding Resident in Tuberculosis and Chest Diseases in post-graduate studies in Delhi, India before establishing his medical career in USA as a primary care physician in Dayton, Ohio. He has served Barlow Respiratory Hospital in Van Nuys and other hospitals in the area since 1998. Dr. Bhardwaj is known for his care and compassion at bedside.

Dr. Michael Karapetian MD serves critically ill patients as internal medicine attending physician at Barlow Respiratory Hospital in Los Angeles. A native of Armenia, where he earned his medical degree, he was selected to serve as chief medical resident in post-graduate residency at Providence Hospital in Southfield, Michigan and has been with Barlow Respiratory Hospital since 2005. He is a board-certified physician, and an important member of Barlow Respiratory Hospital interdisciplinary team. In 2016, Dr. Karapetian was among the hospital team that led to certification, and re-certification in 2021, for the Gold Seal of Approval for Disease Specific Certification for Respiratory Failure by the Joint Commission.

Dr. Michael M. Wang, MD is a board-certified internal medicine physician who has been on the medical staff of Emanate Health Medical Center (formerly named Citrus Valley Medical Center) for the past 26 years. Dr. Wang is well established in the community, respected by his peers, and highly sought after by patients. Dr. Wang has been highly involved with important and outpatient resource utilization, compliance, quality assurance and peer review. Dr. Wang is known for his high standard of care by his physician peers and for holding other providers to these standards.
TOGETHER WE ARE LIMITLESS

We provide world-class health care built on possibility. We don’t shy away from the tough cases. We are Keck Medicine of USC:

Keck Hospital of USC
USC Arcadia Hospital
USC Care Medical Group
USC Norris Cancer Hospital
USC Verdugo Hills Hospital
Adrian Burgos MD began his career at PIH Health in 2019 as a neurology hospitalist specializing in the care of patients admitted to the hospital with a wide array of nervous system disorders. The following year he took on the role of medical director of stroke at the Comprehensive Stroke Center at PIH Health Whittier Hospital. Today, he serves as system stroke medical director for the entire PIH Health system. As a vascular neurologist, he specializes in stroke patient care and expresses his commitment to helping his patients and improving health outcomes through the promotion of stroke awareness, prevention, and treatment.

Brent Gray MD is a board certified obstetrician/gynecologist at PIH Health. He has been with the organization since 1994. Dr. Gray has a special interest in pelvic floor reconstruction and minimally invasive surgery. Dr. Gray currently serves as system-wide vice president of medical affairs for maternal and child health at PIH Health. He is the former chair of the PIH Health Ethics Committee and a former president of the medical staff. Dr. Gray loves science and was inspired to follow in the footsteps of his father, who had a 40-year career at PIH Health as an Ob/Gyn.

Dr. Timothy Cloughesy is a nationally renowned neurologist and a clinical professor of neurology at David Geffen School of Medicine at UCLA. He directs the UCLA Health Neuro-Oncology Program, to be sent for sequencing, and then the patient can be assigned to a clinical trial based on the abnormalities found. Pharmaceutical companies work closely with Dr. Cloughesy and his team to develop drug therapies that target specific mutations and fulfill the promise of personalized medicine. The UCLA Neuro-Oncology Program under Dr. Cloughesy’s leadership offers trials of drugs that target various mutations of the epidermal growth factor receptor (EGFR), the most common glioblastoma abnormality.

Dr. Marc Incerpi holds the current position as the division chief of Maternal-Fetal Medicine. He is also the Ob/Gyn Residency Associate Program director. He is a member of the Clinical Competency Committee and Program Evaluation Committee for both the Ob/Gyn Residency and Maternal-Fetal Medicine Fellowship. Prior to that he was the Ob/Gyn medical student clerkship director for 14 years. During his time at Keck, Incerpi has been the recipient of multiple teaching awards, and has mentored many medical students, residents, fellows, and junior faculty. He has been the chair of the Student Performance Committee and is a member of the Medical Education Curriculum Committee.

Soma Sahai-Srivastava established the Headache and Neurologic Center at Keck School of medicine in 2012, which offers a comprehensive program treating headache disorders and neuropathic pain, with a large collaborative interdisciplinary team (that includes neurology, neurosurgery, neuroradiology, orofacial dentistry, and physical and occupational therapy). This program that began with one neurologist now has seven headache specialists and treats more than 5000 patients annually from all over California. The Headache and Neuropathic center that Dr. Sahai-Srivastava directs serves as an ideal training platform for the Keck Headache fellowship program that was one of the first headache training programs established nationwide.
Every award tells a story of a life touched by Prime Healthcare.

While we are humbled to be recognized, what matters most is that each award reflects the dedication our doctors, nurses and staff have to each and every patient... from Los Angeles to Rhode Island. It is through this tireless commitment that our friends and neighbors get better, feel stronger and live their best lives. That makes us proud. That makes us work harder. That makes us a family of professionals who strive for clinical excellence every day.

Prime Healthcare congratulates our physician leaders Dr. Kavitha Bhatia, Dr. Sunny Bhatia and Dr. Paryus Patel on receiving the 2023 Top Doctor recognition from the Los Angeles Business Journal.

Kavitha Bhatia, MD, MMM, FAAP, FACHE
President & Chair
Prime Healthcare Foundation
Chief Medical Officer, Strategy
Prime Healthcare

Sunny Bhatia, MD, MMM, FACHE, FACC, FSCAI
Chief Executive Officer, Region I
Corporate Chief Medical Officer
Prime Healthcare
Chief Medical Officer
Sherman Oaks Hospital and Encino Hospital Medical Center

Paryus Patel, MD
Corporate Chief Medical Officer
Prime Healthcare
Chief Medical Officer
Centinela Hospital Medical Center

45 Hospitals
14 States
50,000 Staff and Physicians
2.5+ Million Patients Served Annually
300+ Quality Awards in 2022 for Patient Safety and Excellence

Learn more at primehealthcare.com
LEADERS OF INFLUENCE: LA’s TOP DOCTORS

**HEINZ-JOSEF LENZ**
**ONCOLOGY**
Professor of Medicine and Preventive Medicine; J. Terence Lanni Chair of Cancer Research
Keck Medicine of USC

Serving as professor of medicine and preventive medicine and as the J. Terence chair of cancer research for Keck Medicine of USC, Heinz-Josef Lenz, MD has won many prestigious awards for his practice and research. Dr. Lenz considers it a pleasure working at USC with one of the most diverse patient populations in the US. As associate director of clinical science and co-leader of the Translational Science Program, he has worked closely with the Community Outreach Program to increase accrual of minorities at USC. His research focus is on diseases in Keck Medicine’s catchment area particular colon cancers.

**RAVI SALGIA**
**ONCOLOGY**
Arthur & Rosalie Kaplan Chair in Medical Oncology; Chairman, Department of Medical Oncology
City of Hope

Dr. Ravi Salgia is an internationally recognized physician-scientist. He has made seminal contributions to lung cancer which led to new therapeutics, especially those targeting receptor tyrosine kinases that play an important role in the disease pathology. He discovered the MET exon 14 deletion in non-small cell lung cancer against which tepotinib was developed and is approved for treating patients. More recently, Dr. Salgia has focused on the nongenetic mechanisms underlying drug resistance in lung cancer. He was the first to clone the cDNA encoding human paxillin and demonstrated its role in metastasis and in causing resistance to chemotherapy.

**LESLEY TAYLOR**
**ONCOLOGY**
Assistant Clinical Professor Division of Breast Surgery
City of Hope

A graduate of New York Medical College, Dr. Lesley Taylor completed a breast surgical oncology fellowship at Columbia University in New York City after finishing her residency in general surgery at Albert Einstein College of Medicine. Dr. Taylor has brought her passion for international health and her surgical expertise to Ecuador and Ethiopia, where she worked to help eliminate disparities in cancer care. The City of Hope Ethiopia Breast Cancer Initiative includes launching a radiation treatment in Hawassa, Ethiopia, the third program in the country of 114 million people.

**YUMAN FONG**
**ONCOLOGY**
Chairman of Surgery; Sangiacomo Family Chair in Surgical Oncology
City of Hope

Dr. Yuman Fong is internationally recognized as a leading figure in surgical oncology—a clinician scientist who has excelled in both domains. Dr. Fong has been an innovator and mentor in the fields of cancer, robotics in surgery, imaging and display in medicine, and gene therapy. His discoveries have yielded medicines and medical devices used in treatments of inflammation, infection, and cancer. On the team that discovered tumor necrosis factor (TNF), Dr. Fong wrote some of the first papers demonstrating beneficial effects of blocking TNF—the basis for the current clinical use of TNF-antibodies for inflammatory diseases.

**HERE FOR YOU WHEN YOU NEED US MOST**

When skill, expertise, and compassion matter most, we bring our teams together to help turn your health around. We strive to provide quicker diagnoses, more efficient treatment, and most importantly, better outcomes.
CONGRATULATIONS
to our Adventist Health Glendale physicians who were named
Top Doctors for 2023 by Los Angeles Business Journal

Thank you for your endless commitment to our patients and their families and for your devotion to advancing our mission and living God’s love.

Michael Abdulian, MD
Orthopedic Sports Medicine

Peter Ashjian, MD
Plastic Surgery

Yaser Badr, MD
Neurological Surgery
Spine Surgery

Raffi Chalian, MD
Gynecologic Oncology

Linh Chen, MD
Diagnostic Radiology

Hossein Dehghani, MD
Interventional Cardiology

Mikayel Grigoryan, MD
Neurology
Neuroradiology
Vascular Neurology

Dennis Holmes, MD
Breast Surgery

Sylvia Kotikian, MD
Emergency Medicine

Gevorg Mutafyan, MD
Bariatric Surgery

Adventist Health Glendale
LEADERS OF INFLUENCE: LA's Top Doctors

Barlow Respiratory Hospital congratulates our exceptional physicians selected as Top Doctors.

- Ashwani Bhardwaj, M.D.
- Tamas Dolinay, M.D., Ph.D. Respiratory Director
- Michael Y. Karapetian, M.D.
- Hooman R. Kashani, M.D.
- Harry Marshak, M.D., F.A.C.S.
- David R. Nelson, M.D., Medical Director

We are proud of our team and proud to be the destination of choice for medically complex and chronically critically ill patients referred to us from intensive or critical care units at the finest hospitals in California.

Our interdisciplinary teams of board-certified physicians, registered nurses and licensed healthcare professionals work together to provide individualized care and treatment for each of our patients with expertise in ventilator weaning, wound care and critical care medicine. Thank you and Congratulations!

Barlow Respiratory Hospital is the only not-for-profit long-term care hospital in California and has a history of over 120 years of service to Los Angeles.

barlowhospital.org
Emanate Health is proud to honor these highly skilled, dedicated and compassionate physicians. These integral partners help Emanate Health deliver the best care by putting every patient first. Thank you for living our mission to help people keep well in body, mind and spirit by providing quality care in a safe and compassionate environment.


Learn more at EmanateHealth.org
LEADERS OF INFLUENCE: LA's TOP DOCTORS

FRANK A. PETRIGLIANO
Orthopedics
Associate Clinical Professor of Orthopaedic Surgery; Epstein Family Enowed/Chair in Sports Medicine; Director - USC Epstein Family Center for Sports Medicine; Head Team Physician - LA Kings
Keck Medicine of USC

Over the past ten years, Frank A. Petriglano, MD has developed a tertiary referral practice that draws not only from Southern California but also includes patients who travel from outside of the state for evaluation and treatment. This prac-tice focuses on complex athletic shoulder injuries, revision shoulder surgery, shoulder arthroplasty and reverse arthroplasty, as well as fractures of the shoulder. He also main-tains a busy general sports medicine surgery practice that includes the treatment of knee, shoulder and elbow injuries. In 2019, he was named the chief of the division of sports medicine and director of the Epstein Family Center for Sports Medicine at USC.

ANTOINE SOLIMAN
Pediatrics
Medical Director, Neonatal Intensive Care Unit MemorialCare Miller Children’s & Women’s Hospital Long Beach

Antoine Soliman, MD, FAAP serves as division chief of Neonatology and medical director, Neonatal Intensive Care Unit (NICU) at Miller Children’s and Women’s Hospital, site program director of the University of California Irvine (UCI), Children’s Hospital of Orange County (CHOC) and MemorialCare Miller Chil-dren’s & Women’s Hospital neonatal/perinatal fellowship program, and medical direc-tor, Pediatrics Medical Group. He is a valued physician leader by his colleagues, students, administration and, most importantly to Dr. Soliman, his patients and their families. His love for babies developed during his residen-cy at Cedars Sinai Medical Center.

ANDREW YUN
Orthopedics
Medical Director of Joint Replacement Services at Saint John’s Health Center in Santa Monica

Certified by the American Board of Orthopedic Surgery, Andrew G. Yun, MD, is a nationally recognized surgeon and specialist in hip and knee joint replacement. He is also the medical director of Joint Replacement Services at Providence Saint John’s Health Center and is a leader in Joint Replacement. His focus is on helping to ease his patients suffering from arthrit-is pain. Dr. Yun’s most significant concerns are surgical safety, surgical performance, and outcomes, and he cares deeply about tech-nical precision and results. He supervises an outstanding team of healthcare profes-sionals, doctors, nurses, aides, and therapists who will teach, comfort, and guide you during recovery.

BARRY A. STEINMETZ
Pediatrics
Medical Director, Gastroenterology & Nutrition Center; Medical Director, Outpatient Specialty Centers MemorialCare Miller Children’s & Women’s Hospital Long Beach

Much of Dr. Barry Steinmetz’s time at Miller Children’s & Women’s Hospital has been a balance with leading the pediatric gastroenterology program and serving his patients with Pediatric Gastro-enterology Associates of Southern Califor-nia. Under his leadership, fellow pediatric gastroenterology specialists’ needs were implemented in the design, works flows and processes for a new 80,000 square foot outpatient clinic that transformed specialized outpatient pediatri-c care for MCHW. In conjunction, he expanded the care he provides with new clinics and providers.

PETER ASHJIAN
Plastic Surgery
Adventist Health Glendale (Affiliated)

Dr. Peter Ashjian is a board-certified plastic surgeon who specializes in natural-looking plastic surgery results. He received his medical degree from the New York University School of Medicine where he graduated with honors. He completed his residency at the NYU School of Medicine working at renowned hospitals such Bellevue Hospital, Manhattan Eye, Ear, and Throat Hospital, and the Memorial Sloan Kettering Hospital. After completing his plastic surgery residency, Dr. Ashjian completed a fellowship in advanced microvascular surgery at the UCLA Medical Center Division of Plastic Surgery. Dr. Ashjian is a integral part of the Adventist Health Glen-dale breast care program.

KAVITHA REDDY BHATIA
Pediatrics
President and Chief Prime Healthcare Foundation | Chief Medical Officer, Strategy Prime Healthcare

Dr. Kavitha Bhatia, MD, MMM, FAAP, PACHE serves as the CMO of strategy and is a member of Prime Healthcare’s senior executive team. Dr. Bhatia leads the development and implementation of strategic initiatives that advance the mission and long-term success of Prime Healthcare. Dr. Bhatia works with corporate and hospital leaders to align goals, prioritize system-wide value creation and implement strategic initiatives to ensure Prime’s continued operational, financial and clinical success. Dr. Bhatia develops strategies to create unique value and evolve Prime Healthcare’s business model into a model for long-term success, supporting growth, operational and clinical excellence.

ALICE KUO
Pediatrics
Chief of Medicine, Pediatrics
UCLA Health

In her leadership roles, Dr. Alice Kuo is the chief of medicine-pediatrics at UCLA. Since 2014, she has been the director of the Maternal and Child Health Bureau (MCHB)-funded Health Care Transitions Research Network (HCT-RN) for autism spectrum disorders. Since 2006, she has been the director of the MCHB-funded Pathways for Students into Health Professions for dis-advantaged undergraduate students interest-ed in public health and health professional careers. In 2016, she became the director of the MCHB-funded University of California Leadership Education in Neurodevelopmental Disabilities program and in 2020, became the director of the MCHB-funded MCH Center of Excellence at UCLA.
Dr. Moiez Khankhanian

Top Doctor Nomination
L.A. Downtown Medical Center

"Congratulations, Dr. Khankhanian! Thank you for all that you do for the Los Angeles community in mental health."

- LADMC Administration

Dr. Moiez Khankhanian
Chief of Psychiatry

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LEADERS OF INFLUENCE: LA's TOP DOCTORS

HARRY MARSHAK
PLASTIC/RECONSTRUCTIVE
Director, Barlow Respiratory Hospital Center for Wound Restoration
Barlow Respiratory Hospital

Harry Marshak, MD, FACS, directs Barlow Respiratory Hospital's Center for Wound Restoration. He is a board-certified plastic surgeon specializing in reconstructive surgery and has 30 years of wound care experience, including reconstructive surgery for complex wounds. Under his supervision, the hospital's Center for Wound Restoration is an award-winning specialized program, and features an expert interdisciplinary clinical team including Board-Certified Physicians and Wound Care Certified (WCC) Registered Nurses who apply state-of-the-art treatment and healing interventions with a full range of therapies to heal wounds and maximize function.

DR. MOIEZ KHANKHANIAN
PSYCHOLOGY / BEHAVIORAL HEALTH
Chief of Psychiatry
LA Downtown Medical Center

Dr. Moiez Khankhadian is considered a pillar in the community both in his role as a doctor of psychiatry and in his willingness to teach, mentor and serve those around him. He constantly sets up educational programs for current and aspiring healthcare workers and nurses, teaching them how to better care for patients with severe mental illnesses. In his leadership role as chief of psychiatry at LA Downtown Medical Center, Dr. Khankhadian ensures the hospital, and its staff, are constantly trying to provide the best care and support for patients and family members alike.

TAMAS DOLINAY
PULMONOLOGY
Respiratory Director
Barlow Respiratory Hospital

Dr. Tamas Dolinay, MD PhD, respiratory director at Barlow Respiratory Hospital, is a native of Hungary and has been a practicing physician for over 20 years working at various hospitals in many countries. He is an international award-winning scholar, researcher and physician who joined the staff at Barlow Respiratory Hospital in 2019. He also serves as assistant clinical professor, Department of Medicine, Division of Pulmonary, Allergy, Critical Care and Sleep Medicine, University of California Los Angeles, Geffen School of Medicine and previously served as attending physician in Pulmonary and Critical Care Medicine, Department of Medicine, University of Pennsylvania, Perelman School of Medicine.

D. May Lee MD is a dedicated leader, active administrator, influential educator, and collaborative team member who is committed to the tripartite mission of education, patient care, and research. She is currently the Pulmonary and Critical Care Medicine (PCCM) Fellowship program director, but she has held various other administrative positions throughout her career. Administratively, she has led various organizations, committees, and departments and has been a change leader. She is also an accomplished educator who has developed curricula, led programs, is nationally recognized, and published research in medical education. On a national level, she currently serves as the chair of the Training Committee of the American Thoracic Society.

DR. MOIEZ KHANKHANIAN
PSYCHOLOGY / BEHAVIORAL HEALTH
Chief of Psychiatry
LA Downtown Medical Center

R. Moiez Khankhanian is considered a pillar in the community both in his role as a doctor of psychiatry and in his willingness to teach, mentor and serve those around him. He constantly sets up educational programs for current and aspiring healthcare workers and nurses, teaching them how to better care for patients with severe mental illnesses. In his leadership role as chief of psychiatry at LA Downtown Medical Center, Dr. Khankhadian ensures the hospital, and its staff, are constantly trying to provide the best care and support for patients and family members alike.

DAVID R. NELSON
PULMONOLOGY
Medical Director
Barlow Respiratory Hospital

Dr. David R. Nelson is medical director of Barlow Respiratory Hospital. He has served on the hospital medical staff since 1991. A board-certified pulmonologist, he provides clinical management oversight for critically ill patients and the staff caring for them. Dr. Nelson's expertise in critical care and pulmonary medicine includes the diagnosis and treatment of lung diseases of many types and severity. As a hospital leader, Dr. Nelson serves on the Medical Executive Committee, and the Research, Quality Forum, Credentials and Critical Care Committees. Beyond his service to the hospital, he serves as an educator, preparing the next generation of physicians as an associate professor of clinical medicine at UCLA.

PARYUS PATEL
PULMONOLOGY
Corporate Chief Medical Officer
Prime Healthcare

Parsus Patel, MD, is the chief medical officer for Prime Healthcare’s Region III, IV, V, and VI and corporate chief medical officer for Prime Healthcare. Prime Healthcare’s Region III-VI, which includes 18 acute care community hospitals located in Alabama, Georgia, Texas, Kansas, Missouri, Michigan, Florida, Indiana, and Ohio. Dr. Patel is a member of Prime Healthcare’s senior executive team. In addition to serving as chief medical officer for Prime Healthcare, Dr. Patel is currently chief medical officer for Centinela Hospital Medical Center. Dr. Patel also serves as a member of the Board of both Prime Healthcare and the Prime Healthcare Foundation.

DAVID SAYAH
PULMONOLOGY
Medical Director, UCLA Health's Lung and Heart-Lung Transplant Programs
UCLA Health

Dr. Sayah is an assistant professor at David Geffen School of Medicine at UCLA and a pulmonary medicine physician specializing in lung transplant. He is the medical director of the UCLA Health lung and heart-lung transplant programs. Dr. Sayah and the UCLA Health transplant team receive patient referrals from other programs that don’t have the capability to manage complex cases. Patients might be rejected from other centers because of the complexity of their conditions or underlying medical problems that contribute to high surgical risks. Some patients who receive transplants at UCLA Health require concurrent cardiac surgery, suffer from scleroderma or need extracorporeal membrane oxygenation (ECMO) treatment before transplantation.

LINH CHEN
RADIOLOGY
Diagnostic Radiology
Adventist Health Glendale

With a specialty focus on diagnostic radiology, Dr. Linh Chen MD is a fellowship-trained mammographer from Harvard University. Dr. Chen is extremely committed to advancing Adventist Health Glendale’s imaging program and has been a loyal partner to all Adventist’s physicians and service lines. She has been in practice for more than 20 years.
LEADERS OF INFLUENCE: LA’s TOP DOCTORS

HAMED FARID
RADIOLOGY
Director of Interventional Neuroradiology at Emanate Health Queen of the Valley Hospital
Emanate Health

Hamed Farid, MD, MBA is the director of interventional neuroradiology at Emanate Health Queen of the Valley Hospital. Dr. Farid has played a critical role in elevating the Emanate Health Stroke Program. An accomplished neuroradiologist with nearly 20 years of medical experience, Dr. Farid holds the position of associate professor of radiology and neuroradiology at UCI Medical Center. Dr. Farid is the CEO and president of Neurovascular and Spine Associates. Throughout the years, Dr. Farid has made contributions to the field through his research, including, but certainly not limited to, important research on thrombectomy in the area of stroke.

JENNIFER GROSSMAN
RHEUMATOLOGY
Rheumatologist
UCLA Health

Dr. Jennifer Grossman is a highly respected rheumatologist and a clinical professor of medicine at David Geffen School of Medicine at UCLA. She has contributed to more than 50 articles in peer-reviewed publications such as Arthritis & Rheumatology, Computers in Human Behavior and the International Journal of Environmental Research and Public Health. She also co-wrote the textbook Mixed Connective Tissue Disease. The book covers the latest advances in the pathogenesis, prognosis and treatment of mixed connective tissue disease and discusses extra-articular manifestations, pregnancy, muscle involvement and pulmonary manifestations, making this an indispensable resource for current and future practitioners.

ANDREW HUNG
UROLOGY
Assistant Professor of Urology Director, Robotic Simulation & Education
Keck Medicine of USC

Dr. Andrew Hung is a recognized leader in the validation and development of innovative surgical simulation technologies. To train the next generation of urologic surgeons, he developed the first-ever procedure-specific simulation for robotic surgery. Supported by both industry and the National Institutes of Health, Dr. Hung has also become a leading innovator in the development of automated performance metrics for robotic surgery. His collaboration with data scientists has harnessed machine learning algorithms to better predict robotic surgical outcomes. He has served as a consultant for several robotic surgery innovators including Intuitive Surgical and Verb Surgical (Verily / Johnson & Johnson joint venture).

GERALD YOON
UROLOGY
Urology
PIH Health

Gerald Yoon MD is a board certified urologist with fellowship training in endoscopic/laparoscopic techniques for the management of all urologic conditions. In his practice, Dr. Yoon evaluates and treats the full breadth of urologic conditions, including cancer, kidney stones, urinary control problems and sexual health. He is also trained and experienced in Robotic-assisted laparoscopy which is increasingly more commonly utilized in cancer and anatomical diseases related to the urinary system and male sexual organs. To date, Dr. Yoon has been involved with more than 100 robotic surgeries of this nature.

Congratulations, MemorialCare Top Doctors!

Thank you for your continued service to our community. We're proud of your commitment to providing exceptional, high-quality care. Our entire organization celebrates your steadfast dedication to caring for our patients. We appreciate all you do to make our community a healthier place.
Medical Grade Manuka Honey Provides a Natural Prevention Alternative

With the new year underway, scientist and ManukaGuard founder Gavin Gear has urged consumers of all ages to make it a priority resolution in 2023 to protect and maintain their immune systems—through prevention.

“With 2023 well underway, and a particularly fierce cold and flu season upon us, it’s time to get proactive about making our immune systems stronger,” said Gear. “We believe that clean and moisturized sinonasal sprays, for example, can lead to a healthier body overall. We also believe that medical grade manuka honey from New Zealand can get us there. What we have experienced with our own families is that manuka honey, in the form of a nasal spray, can provide cleaning of the sinuses that can lead to a healthier overall lifestyle.”

“We all know that washing our hands is a smart thing to do because it prevents bacteria from making us sick,” added Gear. “Simus nasal spray containing medical grade manuka honey gently accomplishes the same result—cleaner sinuses, which means prevention!”

Gear came to the United States from New Zealand in pursuit of the American dream and founded ManukaGuard in 2009 with a personal commitment to bring wellness to all by harnessing the healing gifts of manuka honey—a New Zealand “superfood” used by Maori people for centuries to treat various health conditions

Traditionally used to heal wounds, soothe sore throats and prevent tooth decay and other ailments, mounting scientific evidence and studies have demonstrated that pure, unadulterated manuka honey, because of its natural ability to combat bacteria, can also be used to support the immune system and help treat or prevent a wide range of conditions.

After thirteen years of research and product development, Gear and his carefully assembled team are now making a range of wellness products—containing pure medical grade manuka honey—available for the first time to the rest of the world. ManukaGuard’s product selection includes a uniquely formulated nasal spray, a cough & throat syrup, pots of edible, medical grade manuka honey of varying strengths, and more.

ManukaGuard products don’t contain GMO, pesticides, additives or artificial colors and flavorings.

Pampered using a proprietary process, ManukaGuard’s medical grade honey is cleansed to an internationally recognized standard of purity. The purification process strengthens the active fractions in manuka honey, further improving on mother nature’s work, and maintaining safety and effectiveness.

“The immune system is designed to gatekeep the bad stuff out, but for many—especially after the last almost three years—our immunity has been compromised,” said Gear. “We are proud to be able to bring the real thing—pure, unadulterated manuka honey from New Zealand to a global audience. It helped our family and we want it to help others.”

Learn more at ManukaGuard.com.

New Approach Traces Links to Genetic Conditions

National Institutes of Health researchers have published an assessment of 13 studies that took a genotype-first approach to patient care. This approach contrasts with the typical phenotype-first approach to clinical research, which starts with clinical findings. A genotype-first approach to patient care involves selecting patients with specific genetic variants and then studying their traits and symptoms. This finding uncovered new relationships between genetic and clinical conditions, broadened the traits and symptoms associated with known disorders, and offered insights into newly described disorders. The study was published in the American Journal of Human Genetics.

“We demonstrated that genotype-first research can work, especially for identifying people with rare disorders who otherwise might not have been brought to clinical attention,” said Caroline Wilczewski, Ph.D., a genetic counselor at the National Human Genome Research Institute’s (NHGRI) Reverse Phenotyping Core and first author of the paper.

Typically, to treat genetic conditions, researchers first identify patients who are experiencing symptoms, then they look for variants in the patient’s genome that might explain those findings. However, this can lead to bias because the researchers are studying clinical findings based on their understanding of the disorder. The phenotype-first approach limits researchers from understanding the full spectrum of symptoms of the disorders and the associated genetic variants.

“Genomics has the potential to change reactive medicine into preventative medicine,” said Leslie Biesecker, M.D., NIH distinguished investigator, director of NHGRI’s Center for Precision Health Research and a senior author of the article. “Studying how to model predictive and precision medicine in the future.”

The study documents three types of discoveries from a genotype-first approach.

First, the researchers found that this approach helped discover new relationships between genetic variants and specific clinical traits. For example, one NIH study found that having more than two copies of the TSPAN1 gene was associated with symptoms related to the gastrointestinal tract, connective tissues, and the nervous system.

Second, this approach helped researchers find novel symptoms related to a disorder that clinicians previously missed because the patient did not have the typical symptoms. NHGRI researchers identified a person with a genetic variant associated with a known metabolic disorder. Further testing found that the individual had high levels of certain chemicals in their body associated with the disorder, despite having only minor symptoms.

Third, this approach allowed researchers to determine the function of specific genetic variants, which has the potential to help clinicians understand newly described disorders. For example, in one study, NHGRI researchers and their collaborators found that a genomic variant was associated with immune dysfunction at the molecular level in blood cells.

The 13 studies that implemented a genotype-first approach used genomic data from NHGRI’s Reverse Phenotyping Core in the Center for Precision Health Research. The core aggregates genomic data from programs such as ClinSeq and the National Institute of Allergy and Infectious Disease’s (NIAID’s) Centralized Sequencing Protocol, which together allowed analyses to be performed on more than 16,000 research participants who have undergone genome or exome sequencing.

Exome and genome sequencing data from participants who consented to broad genomic data sharing and recontact for future research studies are currently available to NIH intramural researchers through the Reverse Phenotyping Core Genomic Data Browser to identify genomic variants of interest for their own research.

“Importantly, we provide a framework for other institutions to build research programs that allow for genotype-first studies. With more programs taking this approach, we can better study the predictive potential of genomic medicine,” said Cleston Turner, M.D., director of NHGRI’s Reverse Phenotyping Core and a senior author of the article.

The framework includes broad genomic data sharing with the ability to recontact participants explicitly stated during the informed consent process. NIHGRI researchers recommend institutions aiming to establish genotype-first centers create strategic plans, especially for deciding what genomic findings will be returned, which may involve genetic counseling services. Importantly, according to the study, researchers must actively communicate with study participants to build informed and trusting long-term relationships.

“In the future, as more researchers adopt this approach, we hope to identify more people who may be helped by the availability of their genome sequence, especially as more diverse populations join genome-sequencing studies,” said Dr. Wilczewski.

Additional information about NHGRI can be found at genome.gov.
New Insights into the Role of Glucose in Kidney Disease

A research team supported by the National Institutes of Health has developed a new approach to better understand the biology of polycystic kidney disease (PKD), an often-life-threatening genetic disorder that affects millions worldwide. Scientists combined two ways to model the disorder — organ-in-a-dish and organ-on-a-chip technologies — to show the role of glucose, a sugar commonly found in blood, in forming PKD cysts. The results could lead to better ways to test and develop treatments for PKD, and perhaps other diseases.

An organ-in-a-dish, or organoid, is a miniature version of an organ grown in a laboratory dish. It can mimic key features of a human organ’s structure and function. Organs-on-a-chip, or tissue chips, are more complex 3-D models, containing channels and living cells, that aim to mimic organ and tissue structure and function. NIH’s National Center for Advancing Translational Sciences (NCATS) research programs develop both technologies as human cell-based approaches to study disease and better predict whether drugs will be safe or toxic in humans.

In PKD, tiny tubes (tubules) in the kidneys expand like water balloons, forming sacs of fluid over decades. The sacs, or cysts, eventually crowd out healthy tissue, leading to problems in kidney function and kidney failure. Scientists have identified many of the genes that cause PKD, but much about the disease remains unknown, including how the cysts form. “We’re able to boil down a complex process of cyst formation in tubules into a process in a petri dish that takes just a few weeks, but there’s been a lack of technologies to study the disease further,” said University of Washington School of Medicine scientist Benjamin Freedman, Ph.D., who led the work. “Animal models are helpful, but translating the results of those studies to people has been a challenge.”

Freedman’s group showed that exposing the PKD organoid-on-a-chip model to a combination of water, sugar, amino acids and other nutrients caused cysts to expand relatively quickly. They found that the cysts were absorbing glucose and pulling in water from the fluid passing over them, making the cysts grow larger. Although glucose is generally absorbed by the kidneys, glucose absorption has not been connected to cyst formation in PKD.

“It wasn’t a huge surprise that the cysts could absorb glucose, but it was surprising that they were dependent on it. It’s a new way of thinking of how these cysts form,” Freedman said.

The scientists added fluorescent glucose to mice with PKD and found that the mouse cysts also took up the glucose. “We think the tubules are taking in fluid in the mice, just like in the organoids. The kidney gets bigger, and as the tubules widen to accommodate the expansion over time, cysts form,” Freedman said.

Understanding the mechanisms of PKD can point to new ways to treat it. As part of the study, the research team showed that adding compounds that block glucose transport prevented cyst growth. Freedman noted glucose inhibitors are being developed for other types of kidney disease.

“The researchers have shown that simulating fluid flow is essential to making this system more like the environment in the kidney with PKD,” said Danelle Taylor, Ph.D., director of the NCATS Office of Special Initiatives. “Combining the two technologies makes tissue chip technology more adaptable to drug discovery and development and allows researchers to take advantage of the strengths of both platforms. This is very promising for studying other diseases in new ways in the future.”

For more information about how NCATS helps shorten the journey from scientific observation to clinical intervention, visit ncat.nih.gov.