



## **PHILADELPHIA INTERNATIONAL MEDICINE® NEWS BUREAU**

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*Editors note: Research, new techniques and improved facilities by Philadelphia International Medicine hospitals and physicians may lead to new ways to treat some of our most challenging diseases. Below are just some examples from our hospitals.*

### **Vision Improvement after Gene Therapy for Inherited Retinal Blindness Maintained at One Year, According to Penn Study**

PHILADELPHIA – One year after three young adults received gene therapy for an inherited form of blindness, researchers have documented that the patients are still experiencing the same level of remarkable vision improvements previously measured within weeks of the treatment. This is the first study to report one-year gene therapy safety and efficacy results in treating young adults with Leber Congenital Amaurosis (LCA), a hereditary condition that causes severe vision impairment in infants and children. The findings are published in *Human Gene Therapy*, now online, and in the *New England Journal of Medicine (NEJM)*.

The three patients: 22, 24, and 25 years-old, who received the gene therapy, have a specific type of LCA caused by a genetic mutation in the RPE65 gene. This gene makes a critical protein in the visual cycle. Without this RPE65 protein, light-sensitive photoreceptor cells are starved of a retina-specific form of vitamin A and cannot function, blocking vision. To correct this genetic defect, researchers targeted retinal regions with impaired, but intact, photoreceptors and injected healthy copies of the RPE65 gene under the retina. One year after the single injection, the healthy genes continue to make this critical protein, increasing the retina's sensitivity to light.

“We had previously shown that RPE65 gene therapy can completely reverse one of the two components of this complex disease and provide patients with increased day and night-vision within weeks,” said Artur V. Cideciyan, PhD, research associate professor of ophthalmology at the University of

Pennsylvania School of Medicine and lead author of the publications. “We now show that the longevity of the visual improvements extends to at least one year.”

As reported in the *NEJM* article, for the first time one patient was able to read an illuminated clock a year following the treatment. This new ability was not caused by a further increase in light sensitivity, which remained unchanged from 1 to 12 months after the treatment, but likely by a slow change in the direction of focus to her treated retina. The change only appeared 12 months after gene therapy.

The team of researchers from the University of Pennsylvania School of Medicine included Tomas S. Aleman, MD, research assistant professor of ophthalmology and Samuel G. Jacobson, MD, PhD, professor of ophthalmology at Penn Medicine’s Scheie Eye Institute and principal investigator of the clinical trial, along with additional colleagues at Penn and at the University of Florida, Gainesville.

“This fascinating finding shows that a person can adapt to the new vision resulting from gene therapy over a prolonged period of time,” said Jacobson. “We will look closely at whether these gradual improvements could be accelerated with visual training in future studies.”

### **New Chair of Otolaryngology and Head & Neck Surgery Appointed at Temple University Hospital**

John H. Krouse, MD, PhD, has been appointed professor and chair of the Department of Otolaryngology and Head & Neck Surgery at Temple University School of Medicine. Dr. Krouse comes to Temple from Wayne State University in Detroit, where he was professor and vice-chair in the Department of Otolaryngology and Head & Neck Surgery.

“Dr. Krouse’s nationally regarded surgical and administrative skills have positioned him well to assume this vital leadership role within the medical school and hospital,” said Daniel T. Dempsey, MD, professor and chair of surgery at Temple.

Before becoming a physician, Krouse served as a clinical psychologist and counselor. “My experiences as a psychologist have been invaluable to me as a physician—because they provided me with an appreciation for the diversity in a patient’s life . . . Those previous experiences also emphatically underlined the importance of comprehensive, patient-centered care.”

After earning a Bachelor’s degree in Fine Arts (Music) from Carnegie-Mellon University in 1975, Dr. Krouse received his Master’s degree in Rehabilitation Counseling from the University of Pittsburgh. Four years later, he earned his Doctorate in Clinical Psychology from the University of Rochester, in Rochester, New York.

Dr. Krouse then earned his MD from Harvard Medical School in 1984. After completing a surgical internship at Beth Israel Hospital, he completed a four-year residency program in Otolaryngology

at Massachusetts Eye and Ear Infirmary, an affiliate of Harvard Medical School. He is board certified in Otolaryngology and specializes in rhinology (diseases of the nose and sinuses) and allergy.

Before moving to Wayne State, Dr. Krouse served on the clinical faculties of the University of Florida and University of South Florida. He was also chief of Otolaryngology at Harper University Hospital, in Detroit, and Detroit Receiving Hospital. Dr. Krouse's publications include over 100 articles and book chapters, as well as five textbooks. He has presented numerous papers at national and international meetings and conferences.

Dr. Krouse's research interests include allergic and nonallergic rhinitis (inflammation of the inner lining of the nose), chronic rhinosinusitis (inflammation of the paranasal sinuses - the air-filled spaces within the bones of the skull and face), endoscopic sinus surgery, and allergic rhinitis and sleep.

Dr. Krouse is also the past president of the American Academy of Otolaryngic Allergy; and received its President's Award for Leadership in 2008, in addition to numerous other awards from this prestigious organization. He is a fellow of six professional medical societies, and has been a visiting professor at 10 universities. Dr. Krouse has an international practice and accepts new patients.

### **Fox Chase Cancer Center Adds Dr. Yun Shin Chun to Surgical Oncology Team**

Yun Shin Chun, MD, has joined Fox Chase Cancer Center as an attending surgeon in the department of surgical oncology. At Fox Chase, Dr. Chun treats patients with liver cancer, biliary tract cancer, pancreatic cancer, gastrointestinal cancers, and colorectal metastases to the liver. Her research interests include predicting an individual's response to chemotherapy, the link between obesity and cancer, and quality of life after liver resection.

Dr. Chun comes to Fox Chase from M.D. Anderson Cancer Center, where she was a clinical specialist in the department of surgical oncology and the department of critical care and where she completed her surgical oncology fellowship. In addition to the surgical oncology fellowship, Chun also completed a research fellowship at Memorial Sloan-Kettering Cancer Center and a general surgery internship and residency at Mayo Clinic.

"My work has contributed to our understanding and management of gastrointestinal cancers, especially of the liver, pancreas, and biliary tract," Dr. Chun adds. "I wrote the first North American study on two-stage hepatectomy, which entails removing multiple tumors in the liver while ensuring that sufficient normal liver remains."

Dr. Chun earned her MD from New York Medical College and BA from Harvard University. She is certified by the American Board of Surgery and is an active member of a number of medical organizations.

## **Jefferson and Wills Eye Battling Rare Childhood Cancer Together**

Retinoblastoma is a rare cancer that develops in the retina of the eye and mostly affects young children. Almost two-thirds of all retinoblastoma cases occur before the age of two, and 95 percent occur before the age of five. Jefferson Hospital for Neuroscience (JHN) and Wills Eye Institute, the Department of Ophthalmology at Jefferson Hospital, are now offering young patients a new treatment option that can save their life and help save their vision. JHN is the only center in the Philadelphia region and second in the nation to offer this targeted treatment.

Intra-arterial chemotherapy is a novel technique that delivers high doses of chemotherapy directly into the artery of the affected eye. This therapy allows for a repeated delivery of the chemotherapeutic agents to destroy the retinoblastoma cells and minimize the side effects associated with more traditional intravenous (IV) chemotherapy.

For most retinoblastoma patients, chemotherapy is delivered either through an IV, where it travels throughout the body and eradicates the cancer but can cause side effects like hair loss or more serious effects like deafness, kidney failure, or leukemia. Unfortunately, surgical removal of the affected eye (enucleation) is often necessary for children with advanced retinoblastoma to ensure the overall health of the child.

Now, the intra-arterial chemotherapy has been pioneered by the Philadelphia team at JHN and Wills Eye Institute. Carol Shields, MD, an eye cancer specialist at Wills Eye Institute, has teamed up with Robert Rosenwasser, MD, chair of the Department of Neurological Surgery at Jefferson Medical College of Thomas Jefferson University, to treat these patients with this new, targeted therapy.

First the child is evaluated by Dr. Shields and the diagnosis of retinoblastoma is established, and evaluation of blood flow to the eye is studied. Next, Dr. Rosenwasser inserts a long, thin tube known as a microcatheter into an artery in the child's body and threads it up until it reaches the artery leading to the eye containing the retinoblastoma cancer. Chemotherapy agents are then injected into the tube and delivered directly into the eye. Later, reassessment with laser treatment to the cancer is performed by Dr. Shields.

“Intra-arterial chemotherapy is a promising new technique for treatment of selective cases of retinoblastoma and allows for a higher local dose of chemotherapy to the eye with minimal side effects to the body as compared to the more traditional intravenous method,” said Dr. Shields. “This high dose of

chemotherapy delivered to the eye accelerates regression of the tumor, without adversely affecting other healthy organs. While the long term outcome of these patients is still unknown, this new delivery system may reduce the need to surgically remove some patients' eyes."

Thomas Jefferson Hospital operates a pediatric clinic in conjunction with Nemours/Alfred I. duPont Hospital for Children in Center City Philadelphia. Both Thomas Jefferson University Hospital and duPont Hospital's suburban Philadelphia hospital have international practices and treat numerous pediatric conditions.

**Philadelphia International Medicine** is an organization that provides medical and patient support services to international patients. It also provides continuing medical education and health care training and education to international physicians, administrators and other practitioners. PIM is owned by the Fox Chase Cancer Center, Pennsylvania Hospital, Temple University Hospital, Thomas Jefferson University Hospital and the University of Pennsylvania Medical Center. It holds affiliation agreements with the Alfred I. duPont Hospital for Children and St. Christopher's Hospital for Children. As the international department of several Philadelphia-area hospitals, international patients gain access to physicians and hospitals rated among the best in the world through one telephone call. You can reach PIM by calling 1-215-563-4733; fax, 1-215-563-2777; or e-mail, [physicians@philadelphiamedicine.com](mailto:physicians@philadelphiamedicine.com). You can find out more about PIM through its Website at [www.philadelphiamedicine.com](http://www.philadelphiamedicine.com).