To schedule an appointment or for more information about this revolutionary treatment, please call 323.442.6335 or visit us online at USCeye.org.

ADVANCED MEDICAL IMAGING
Early diagnosis and detection of disease progression are crucial in glaucoma management and prevention of vision loss. Optical coherence tomography (OCT) imaging of the retina and optic nerve transformed the way modern ophthalmologists practice. Glaucoma specialists at the USC Roski Eye Institute are investigating clinical applications for the newest advancements in OCT technology.

Grace Richter, MD, MPH, studies OCT angiography, a form of OCT that offers high-resolution visualization of the blood vessels around the optic nerve, the primary site of damage in glaucoma.

"Anterior segment OCT has major implications for patients who have or are at risk for angle-closure glaucoma. These patients pose a unique clinical challenge, even for experienced glaucoma specialists. Anterior segment OCT could revolutionize the way we diagnose and manage these patients."
— Benjamin Xu, MD, PhD

Benjamin Xu, MD, PhD, studies a different form of OCT called anterior segment OCT, which is used to image structures in the front of the eye, rather than the back of the eye.

"Basic science provides clinician-scientists with the tools necessary to study glaucoma and identify novel treatment methods for patients with the disease."
— Sahar Bedrood, MD, PhD

Sahar Bedrood, MD, PhD, applies molecular biology principles and techniques to answer clinically oriented questions, such as characterizing the three-dimensional structure of fibrils found in pseudoexfoliation syndrome and glaucoma.

TRANSLATIONAL MEDICINE
At the USC Roski Eye Institute and Keck School of Medicine of USC, clinicians and basic scientists work together to study the pathophysiology of an assortment of eye diseases. Sahar Bedrood, MD, PhD, applies molecular biology principles and techniques to answer clinically oriented questions, such as characterizing the three-dimensional structure of fibrils found in pseudoexfoliation syndrome and glaucoma.

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GLAUCOMA SERVICE

The Glaucoma Service at the USC Roski Eye Institute is a team of specialists dedicated to preventing vision loss through high-quality patient care and cutting-edge research.

WHAT IS GLAUCOMA?

Glaucoma is a disease that leads to the damage of the optic nerve, the part of the eye that carries visual information from the retina to the brain. It is a leading cause of irreversible blindness worldwide. However, if diagnosed and treated early the loss of vision can be prevented. Elevated intraocular pressure (IOP) is a risk factor for glaucoma, but it is not the sole determinant of who will develop the disease. Other risk factors include family history and prior ocular surgeries. At USC Roski Eye Institute, we provide state-of-the-art diagnostic exams. Glaucoma specialists examine both the structure and function of the optic nerve to determine the presence of the disease, our doctors are here to provide you with care tailored to your specific needs. All of our physicians are fellowship-trained in glaucoma.

DIAGNOSTIC SERVICES

Glaucoma-related vision loss most often begins with the decline of peripheral vision. People suffering from the condition often do not notice the effects of their glaucoma until they have lost a significant portion of their sight. Glaucoma may be detected early through routine eye exams. Glaucoma specialists examine both the structure and function of the optic nerve to assess its state of health. The earlier glaucoma is detected and treatment is initiated, the more likely visual function can be preserved. At the USC Roski Eye Institute, we provide our patients with state-of-the-art diagnostic services, such as:

- Visual Field Testing: standard Automated Perimetry and Short-Wavelength Automated Perimetry
- Ultra sound Biomicroscopy
- Optical Coherence Tomography
- Optical Coherence Tomography Angiography
- Anterior Segment Optical Coherence Tomography
- Corneal Pachymetry
- Stereoscopic Optic Disc Photography
- Fluorescein Angiography

GLAUCOMA TREATMENTS

When glaucoma is confirmed, our specialists develop a personalized treatment plan. This may include non-invasive treatments such as medication and lasers, minimally invasive glaucoma surgery (MIGS) or an incisional surgical procedure.

Non-Surgical Laser Procedures
- Trabeculoplasty
- Laser Trabeculectomy (ILT)
- Laser iridotomy (LPI)
- Micropulse transcorneal and diode laser cyclophotocoagulation (CPC)

Minimally Invasive Glaucoma Surgery (MIGS)
- iLAsr
- Trabectome
- Khodok Dual Blade
- GlyPass Micro-stent

Non-Surgical Laser Procedures
- Trabeculotomy
- Glaucoma Drainage Devices: EX-PRESS Ahmed, Baerveldt and Molteno
- Femtosecond laser technology (in combination with cataract surgery)

THE USC DIFFERENCE

At USC Roski Eye Institute, we pride ourselves on providing our patients with cutting-edge diagnostic and treatment options to optimize visual outcomes and minimize surgical risks and complications. Whether you have previously been diagnosed with glaucoma or are suffering symptoms that may indicate the presence of the disease, our doctors are here to provide you with care tailored to your specific needs. All of our physicians are fellowship-trained in glaucoma.

To schedule an appointment or for more information, please call 323.442.6335 or visit us online at USCeye.org

GLAUCOMA TREATMENTS

When glaucoma is confirmed, our specialists develop a personalized treatment plan. This may include non-invasive treatments such as medication and lasers, minimally invasive glaucoma surgery (MIGS) or an incisional surgical procedure.

- Open-angle Glaucoma
- Angle-closure/Narrow Angle Glaucoma
- Congenital and Childhood Glaucoma
- Juvenile Onset Glaucoma
- Glaucoma Associated with Retinal Diseases
- Glaucoma Secondary to Eye Trauma
- Narrow Angle Glaucoma
- Glaucoma Secondary to Steroid Use
- Pigmentary glaucoma dispersion
- Panuveitis associated with leukemia or lymphoma
- Uveitic Glaucoma

- Fluorescein Angiography
- Stereoscopic Optic disc Photography
- Anterior segment Optical coherence tomography
- Optical coherence tomography
- Optical coherence tomography
- Optical coherence tomography
- OCT angiography
- Ab interno Canaloplasty (ABC)
- XEN Gel Stent
- Femtosecond laser technology
- Laser iridotomy (LPi)
- Minimally Invasive Glaucoma Surgery (MIGS)
- Trabeculoplasty
- Laser Trabeculectomy (ILT)
- Micropulse transcorneal and diode laser cyclophotocoagulation (CPC)
- Automate Perimetry
- Short-Wavelength Automated Perimetry

- CyPass Micro-stent
- Kahook dual Blade
- Ahmed, Baerveldt and Molteno
- Trabeculectomy
- Glaucoma Drainage Devices: EX-PRESS Ahmed, Baerveldt and Molteno
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“OCT angiography has the potential to improve our ability to detect glaucoma at an earlier stage. It is a novel technology, providing us with fresh insights into the causes of open-angle glaucoma.”

— Grace Richter, MD, MPH

“You are the most important person to them, when you go, no one else exists...whatever you need, they are there for you. You feel well taken care for medically and emotionally.”

— Vivian

ADVANCES IN GLAUCOMA

The glaucoma specialists at USC Roski Eye Institute are committed to clinical and scientific research.

TECHNOLOGICAL INNOVATION

Ophthalmologists at the USC Roski Eye Institute are at the forefront of developing and testing new medical devices for the treatment of glaucoma, including intraocular pressure (IOP) sensors, drug delivery systems, and surgical instrumentation. Roht Varma, MD, MPH, professor of ophthalmology, played an integral role in the development of the XEN Gel Stent, an innovative minimally invasive treatment for alleviating high IOP. The XEN is a soft collagen-derived stent that promises to revolutionize modern glaucoma surgery. He worked on designing the device and analyzing outcome data over several years of clinical trials.

“XEN device is a game changer for open-angle glaucoma patients who are unresponsive to maximum tolerated medical therapy.”

— Roht Varma, MD, MPH

In keeping with their status as national leaders in innovative treatments to prevent blindness, ophthalmologists at USC Roski Eye Institute were the first in Los Angeles to implant the XEN Gel Stent in patients outside of clinical trials. The surgeries were performed by Alena Roznik, MD, and Sahar Bedrood, MD, PhD, shortly after the XEN was approved by the FDA in late 2016.

EPIDEMOLOGY

Roht Varma, MD, MPH, and a team of researchers at the USC Ocular Epidemiology Center conducted the Los Angeles Latino Eye Study (LALES) from 1998 to 2014. The ground-breaking study provided important insights into the ocular epidemiology of adult Latinos aged 40 years and older. Due to the high incidence of glaucoma found during the LALES, the US Center for Medicare now provides glaucoma screening benefits to Latinos aged 50 years and older. Varma, Richter, and Xu are conducting similar epidemiological studies in the Chinese American and African American communities of Los Angeles to better ocular health and eye disease in these populations.