

FLAUM EYE INSTITUTE RETINAL CARE

CLINICAL RETINA SPECIALISTS



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Focus on Retinal Disease

Macular degeneration, diabetic retinopathy, and lesser known conditions of the retina account for the majority of adult blindness in North America. The diagnosis and treatment of retinal disease is one of the biggest challenges for patients, doctors and vision scientists alike.

The Flaum Eye Institute is a leading institution for scientific research into retinal disease. Our efforts focus on understanding the process of retinal disease. Knowing how degeneration occurs will lead to treatments that prevent and ultimately reverses blindness. The Flaum Eye Institute continues to invest in people and technology that will contribute to developing earlier detection, better therapies, and restoring vision. Our doctors work hand-in-hand with our researchers to develop and introduce the latest advances through human-based research and clinical trials. Our research staff includes five investigators, six research associates, three post-doctoral students and 17 graduate students, technical staff, and ophthalmology residents. The result of this collaborative effort is that thousands of patients from across the region receive expert care that detects disease and prevents or reverses vision loss.

Translating Discoveries into Treatments

As the only academic retina center in the region, we are always among the first to offer new treatments. Our patient care, outreach, and training enterprise encompasses:

- The region's most modern facility for advanced diagnostic equipment and surgical procedures.
- The only regional center for implantation of intraocular telescopes to manage the effects of end-stage macular degeneration. The implantable miniature telescope improves near vision for some patients who have end-stage macular degeneration by magnifying images and projecting them onto areas on or near the macula that are less damaged by disease.
- The most comprehensive drug treatment center for macular degeneration, diabetic retinopathy, uveitis, and other diseases.
- Funded research programs in telemedicine to diagnose, counsel, and treat patients from economically disadvantaged populations. This allows for an assigned care team to review images taken of a patient's eye in order to diagnose, educate, and potentially treat the disease.
- Educational outreach, health screenings, and support to patients suffering from diabetic retinopathy and macular degeneration.
- Upstate New York's only fellowship program to train the next generation of retina specialists.

Macular Degeneration - A Growing Concern

Age-related macular degeneration (AMD) is a leading cause of blindness in older Americans. The incidence of this disease is expected to double during the next 25 years. Our researchers are conducting major studies to better understand and develop new treatments for patients. They are using clinical trials to evaluate new combinations of vitamins and minerals to slow the progression and enhance the treatment of AMD; studying retinal imaging techniques using the Rochester Adaptive Optics Scanning Laser Ophthalmoscope—developed at the University’s Center for Visual Science—to advance our understanding of the early development of AMD; developing a preclinical model of toxin-induced AMD as it relates to smoking; and helping to develop new pharmaceutical therapies and better ophthalmic devices. The Flaum Eye Institute is dedicated to pioneering new diagnostics and treatments to help preserve vision for patients suffering from macular degeneration and other types of vision disease.

Seeing Deeper; a Keystone to Success

The Flaum Eye Institute is recognized as the world’s most advanced center for imaging the living retina. Through collaborations with other University of Rochester departments and industry, researchers at the University have developed and refined



groundbreaking technology called adaptive optics (AO) imaging. This technology allows researchers to evaluate the structure and function of single retinal cells in patients, facilitating early diagnosis and assessment of prospective treatment strategies.

There are several projects we are working on that may help prevent blindness including:

- Developing high-resolution diagnostic instruments for doctors’ offices that could detect treatable diseases, like macular degeneration, long before damage occurs.
- Using gene therapy to restore functional vision to patients whose photoreceptor cells have been destroyed by diseases such as retinitis pigmentosa and macular degeneration.
- Aiding research to restore visual function to patients by growing stem cells to replace damaged retinal cells.
- Identifying potential drugs that will retard or prevent retinal degenerations
- Investigating the interface between sight restoring electronic retinal prostheses and human tissue.
- Discovering the fundamental changes in retinal cell function occurring in degenerative and hereditary retinal diseases (e.g. macular degeneration) that lead to new preventative and therapeutic interventions.

Flaum Eye Institute Basic Retina Scientists

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