Ultra-Widefield Retinal Imaging

Fundus imaging plays an important role in the evaluation and documentation of different posterior segment disorders. Traditional fundus photography methods only allow for the evaluation of 30 to 60 degrees at a time and therefore limit the evaluation of peripheral retinal and choroidal pathology. The use of fundus montage with these 30-60 degree images allows for a wider view, but has limited utility in angiographic studies, as the far periphery is not imaged. Additionally, the montage images are not taken at the same point in time and therefore are difficult to compare to future studies.

Over the past decade, the development of different systems that allow evaluation of the peripheral anterior retina and choroid have caused great interest in the ophthalmology community.
These new systems capture up to 200 degrees of the retina in a single image.

The newest generation system from Optos (Optos, United Kingdom) is able to perform a variety of ultra-wide-field (UWF) imaging, including fundus photography, autofluorescence, fluorescein angiography, and indocyanine green angiography.

This new imaging modality has the potential to play an important role in the diagnosis and management of diseases affecting the peripheral retina and choroid.

UWF fundus photography permits convenient documentation of peripheral abnormalities such as retinal detachments and choroidal lesions/tumors, and is particularly useful in electronic records documentation and for medicolegal purposes.

Autofluorescence has been shown to be helpful in the follow-up of patients with choroidal dystrophies and different inflammatory conditions. It can also reflect current scotomas and provide findings preceding enlargement of visual field defects.

Fluorescein angiography of the anterior retina allows for visualization of peripheral retinal nonperfusion, vascular leakage, and neovascularization in patients with vascular diseases such as diabetic retinopathy, vein occlusion, retinal vasculitis, and sickle cell disease. Multiple studies have reported the presence of angiographic changes that suggest activity in the absence of abnormalities on clinical exams. Although still
under investigation, these findings may modify future treatment algorithms and improve patient outcomes.

Fluorescein angiography in proliferative diabetic retinopathy with associated capillary dropout

UWF indocyanine angiography is the newest addition to the Optos system. The evaluation of the peripheral choroid may be especially important in the evaluation of inflammatory conditions, such as multifocal choroiditis, and may help monitor these patients and gauge their treatment accordingly.

Indocyanine green angiography in active choroiditis

Ophthalmology is always challenging because of the field’s ever-changing technological and therapeutic modalities. The imaging advances we have seen will help us understand the mechanism of different diseases and will have implications for diagnosis and future patient management.
Cardiovascular Risk Factors in Central Retinal Artery Occlusion

Central retinal artery occlusion (CRAO) is a devastating disease leading to severe vision loss. CRAO has an incidence of approximately 1 per 100,000 people and may be one important manifestation of a systemic disease with increased mortality.

CRAO patients experience a reduction in lifetime of 10 years and, when compared with healthy controls, a 2.7-fold higher stroke risk. Incidence is highest within the first month after CRAO onset.

No intervention thus far has proven to be effective, and current management focuses on identifying and treating associated cardiovascular risk factors, which include hypertension, heart valve and coronary heart diseases, carotid artery disease, diabetes, tobacco use, and hyperlipidemia. Ipsilateral carotid artery stenosis is very frequent and carotid ultrasound seems to be the most relevant diagnostic procedure in CRAO patients.

All CRAO patients are at high risk for future vascular events and should undergo a comprehensive diagnostic work-up.

Reference:

Central retinal artery occlusion with cilioretinal artery sparing
Clinical Trials Highlights

This is an exciting time for Retina Group of Florida research. We are actively enrolling patients with wet age-related macular degeneration (AMD), geographic atrophy, and central retinal vein occlusion into six separate clinical trials.

Active Studies

**AMD**

**LADDER** is a trial studying the port delivery system for sustained delivery of Rnibizumab in patients with subfoveal neovascular AMD.

**Capella** is a Phase 2 study of a co-formulation anti-pdgf/anti-vegf intravitreal injection compared to Eylea in patients with treatment naive neovascular AMD.

**OPH1004** is a phase 3 study comparing an intravitreal anti-PDGF aptamer, Fovista, combined with either Avastin or Eylea compared to Avastin or Eylea monotherapy.

**SPECTRI** is a trial studying intravitreal injections of lampalizumab, an anti-factor D antibody fragment for the treatment of geographic atrophy.

**TOGA** is a study that involves oral administration of ORACEA, a tetracycline derivative, compared to placebo for the treatment of geographic atrophy.

**CRVO**

**SCORE 2** trial is comparing intravitreal bevacizumab (Avastin) to aflibercept (Eylea) for the treatment of macular edema due to central retinal vein occlusion.

Upcoming Studies

**AMD**

**ECT Study** is a Phase I study to evaluate the intravitreal implantation of encapsulated cell technology, which provides intravitreal sustained release of soluble VEGF receptor, compared with Eylea® for the treatment of wet AMD.

**Diabetic Retinopathy**

**Panorama** is a phase 3 study of intravitreal aflibercept injection (IAI) in patients with Diabetic Retinopathy. Patients must be treatment naïve.

**READ-4** is evaluating the safety of intravenous infusions of tocilizumab in the treatment of diabetic macular edema as monotherapy and in combination with intravitreal ranibizumab.

**Uveitis**

**PEACHTREE** is a phase 3 trial evaluating the use of triamcinolone acetonide Injectable Suspension (CLS-TA) for the treatment of subjects with macular edema associated with non-infectious uveitis.

The end of 2015 and beginning of 2016 look to be a remarkable time for groundbreaking research in many diseases affecting the retina. Please contact any of our physicians or our study coordinator, Jaclyn Brady, for any inquiries or to enroll a patient. 954-776-6880
Retina Group of Florida Physicians

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Delray Beach
Boca Raton
Fort Lauderdale

Lawrence S. Halperin, MD
Boynton Beach
Boca Raton
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W. Scott Thompson, MD
Boca Raton
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Kevin Kelly, MD
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Darin R. Goldman, MD
Wellington
Boynton Beach
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Eduardo Uchiyama, MD
Wellington
Boca Raton
Fort Lauderdale
Plantation and Hollywood

www.retinagroupflorida.com
# Retina Group of Florida Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Phone Numbers</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fort Lauderdale</strong></td>
<td><strong>Imperial Point Medical Arts Pavilion</strong></td>
<td></td>
<td>I-95 to Cypress Creek Road. Exit East to Federal Hwy. Turn left (north) onto Federal Hwy and then left again into Broward Health Imperial Point Medical Center. Building is on the left.</td>
</tr>
<tr>
<td></td>
<td>6333 North Federal Hwy, Suite 300</td>
<td>p: 954-776-6880</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fort Lauderdale, FL 33308</td>
<td>f: 954-776-6895</td>
<td></td>
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<tr>
<td><strong>Boca Raton</strong></td>
<td><strong>Glades Tower I</strong></td>
<td></td>
<td>I-95 to Glades Road. Exit east to NW 10th Avenue. Go right then a quick left into the parking lot.</td>
</tr>
<tr>
<td></td>
<td>950 Glades Road, Suite 1-C, Boca Raton, FL 33431</td>
<td>p: 561-394-6499</td>
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<td></td>
<td></td>
<td>f: 561-391-6004</td>
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<tr>
<td><strong>Boynton Beach</strong></td>
<td><strong>The 8190 Building</strong></td>
<td></td>
<td>I-95 to Gateway Blvd. Exit west to Jog Road. Turn right onto Jog, then right onto Le Chalet. Building is yellow, marked 8190, 2nd on the right.</td>
</tr>
<tr>
<td></td>
<td>8190 Jog Road, Boynton Beach, FL 33472</td>
<td>p: 561-737-1355</td>
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<td></td>
<td></td>
<td>f: 561-737-8335</td>
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<tr>
<td><strong>Plantation</strong></td>
<td><strong>Bank of America Building</strong></td>
<td></td>
<td>I-95 to Sunrise Blvd. West to Pine Island Road. Southeast corner of Pine Island Road and Sunrise Blvd.</td>
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<tr>
<td></td>
<td>1776 N. Pine Island Rd, Suite 312, Plantation, FL 33322</td>
<td>p: 954-452-4500</td>
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<td></td>
<td></td>
<td>f: 954-452-2027</td>
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<tr>
<td><strong>Hollywood</strong></td>
<td><strong>Presidential Circle</strong></td>
<td></td>
<td>I-95 to Hollywood Blvd. Exit west and approx. 1 mile to Presidential Circle, 1/4 around circle. Building on left, office is in the north wing.</td>
</tr>
<tr>
<td></td>
<td>4000 Hollywood Blvd, Suite 190-N</td>
<td>p: 954-894-7020</td>
<td></td>
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<tr>
<td></td>
<td>Hollywood, FL 33021</td>
<td>f: 954-894-4822</td>
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<tr>
<td><strong>Wellington</strong></td>
<td><strong>Bldg 1397/Med Arts Pavilion III</strong></td>
<td></td>
<td>I-95 to Forest Hills Blvd. Exit west to SR7/441. Go right, then a quick left into Wellington Region Medical Campus. Last bldg. on NW corner.</td>
</tr>
<tr>
<td></td>
<td>1397 Medical Park Blvd, Suite 240, Wellington, FL 33414</td>
<td>p: 561-784-3788</td>
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<td></td>
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<td>f: 561-784-3855</td>
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<tr>
<td><strong>West Palm Beach</strong></td>
<td><strong>BB&amp;T Building</strong></td>
<td></td>
<td>I-95 to SR-76 (exit 101). Follow all the way down to Traffic circle and take first right which will be Ocean Blvd. Eye Care Center will be on left after about one mile.</td>
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<tr>
<td></td>
<td>2000 Palm Beach Lakes Blvd, Suite 400, West Palm Beach, FL 33409</td>
<td>p: 561-737-1355</td>
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<td></td>
<td>f: 561-737-8335</td>
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<tr>
<td><strong>Stuart</strong></td>
<td><strong>Eye Care and Surgery</strong></td>
<td></td>
<td>I-95 to Linton Blvd. Exit and go west to Jog Rd. Make a U-turn heading east on Linton Blvd. Office will be on right side in the Addison Medical Professional complex.</td>
</tr>
<tr>
<td></td>
<td>1441 E Ocean Blvd, Stuart, FL 34996</td>
<td>p: 561-784-3788</td>
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<td></td>
<td>f: 561-784-3855</td>
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<tr>
<td><strong>Delray Beach</strong></td>
<td><strong>Addison II</strong></td>
<td></td>
<td>From I-75 exit Pines Blvd and go east. Take left onto Flamingo Rd. Take exit onto Flamingo Rd. and head north. The medical complex is located 1/4 mile north of the intersection of Pines Blvd and Flamingo Rd.</td>
</tr>
<tr>
<td></td>
<td>6298 Linton Blvd, Suite 104, Delray Beach, FL 33484</td>
<td>p: 561-737-1355</td>
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<td></td>
<td>f: 561-737-8335</td>
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<tr>
<td><strong>Pembroke Pines</strong></td>
<td><strong>Memorial West Medical Office</strong></td>
<td></td>
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<tr>
<td></td>
<td>603 N Flamingo Rd, Suite 250, Pembroke Pines, FL 33028</td>
<td>p: 954-894-7020</td>
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<td></td>
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<td>f: 954-894-4822</td>
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Ranibizumab is not inferior to Panretinal Photocoagulation against Proliferative Diabetic Retinopathy

Proliferative diabetic retinopathy (PDR) is a leading cause of vision loss in patients with diabetes. Nearly 50% of patients with high-risk PDR experience severe vision loss within 5 years. Panretinal photocoagulation (PRP) has been the standard treatment for PDR for nearly 40 years, but such treatment can cause permanent peripheral visual field loss and decreased night vision and may exacerbate diabetic macular edema.

In a randomized clinical trial conducted by the Diabetic Retinopathy Clinical Research Network (DRCR.net), researchers have found that ranibizumab is an effective alternative to PRP in the treatment of PDR. Individual eyes were randomly assigned to receive PRP treatment, completed in 1 to 3 visits, or ranibizumab, 0.5 mg, by intravitreous injection monthly for three consecutive months, and then as needed until the condition resolved or stabilized. Treatment with ranibizumab resulted in visual acuity that was noninferior to (not worse than) PRP treatment at the 2-year mark. Although longer-term follow-up is needed, ranibizumab may be a reasonable treatment alternative, at least through 2 years, for patients with PDR.

Factors to consider when weighing the relative benefits of treatment of PDR with PRP vs. ranibizumab are treatment cost, adherence to and frequency of follow-up, and patient preference.