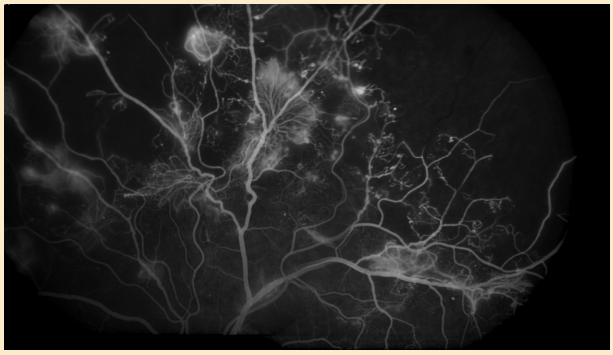
Proliferative Diabetic Retinopathy

Proliferative diabetic retinopathy (PDR) is a serious complication of diabetes mellitus in which abnormal blood vessels grow and proliferate from the retinal surface into the vitreous cavity in front of the retina. These abnormal blood vessels can break and bleed into the vitreous or they can grow into traction bands that pull the retina off the wall of the eye. Untreated PDR can cause blindness, but retinal treatments and control of the underlying diabetes can stabilize the disease.

Who gets proliferative diabetic retinopathy?
While proliferative diabetic retinopathy is present in less than 5% of individuals with diabetes, it is present in more than 20% of younger, insulin-dependent diabetics and it is more common with age, poor glycemic control, and high blood pressure. Progression to proliferative diabetic retinopathy is more common in patients with diabetic non-healing ulcers, diabetic nephropathy (kidney disease), and diabetic neuropathy (nerve damage).

How does PDR affect the vision?
Proliferative diabetic retinopathy is often asymptomatic while the abnormal blood vessels slowly grow over a period of months to year. This is one reason why regular retinal examination is so important in individuals with diabetes; PDR is easier to treat the earlier it is identified. If proliferation continues and results in bleeding, the vision may be obscured by the blood. If traction bands result in a tractional retinal detachment, the detachment causes loss of vision.

How is PDR diagnosed?
Proliferative diabetic retinopathy is generally diagnosed by an eye care professional. Diagnostic testing may include fluorescein angiography (an orange dye is injected into a vein in your arm and rapid sequence photos are taken of your eye), ocular ultrasound (a probe is placed on your eyelid and reflected sound waves produce images on a screen) and optical coherence tomography (light beams are sent into your eye and the reflected light is then processed by a computer). Your BARA doctor will select diagnostic tests most appropriate for your particular case of PDR.



Fluorescein angiography can identify fronds of proliferative vessels as well as regions of ischemia (loss of blood supply due to diabetes that drives proliferation).

Bay Area Retina Associates

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Treatment of PDR

There are various methods of treating proliferative diabetic retinopathy. These methods may be employed individually or together.

Laser Treatment: Panretinal photocoagulation (PRP) laser treatment creates hundreds of small laser burns throughout the peripheral retina, thereby decreasing the stimulus for new blood vessel growth. This treatment may be done in one or more sessions. This treatment is highly effective and has saved vision in millions of patients. PRP laser provides long-term control of PDR.

Anti-VEGF therapy: Injections of anti-VEGF medications into the eye block signals released by sick regions of the retina and thereby suppresses the stimulus for proliferation. Proliferative vessels often regress (become inactive) very quickly following treatment, but the effect of anti-VEGF therapy is usually temporary, lasting months before the proliferative process resumes. However, anti-VEGF therapy does not affect peripheral vision.

Micro-incisional sutureless vitrectomy surgery: This procedure is recommended in cases of advanced bleeding or scarring inside the eye. Vitrectomy surgery is performed in an operating room. Tiny needle-sized incisions are made in the eye. The surgeon views the interior of the eye through a microscope while using fine instruments to remove blood, clear out scar tissue, repair the retina and perform laser treatment.

Panretinal photocoagulation (PRP) is the placement of hundreds of small laser spots around the periphery of the retina in order to suppress the release of VEGF, the primary signal molecule that stimulates retinal blood vessel proliferation. Proliferation can occur at the optic nerve (neovascularization of the disc) or from the retina (neovascularization elsewhere). Your BARA doctor looks at the status of NVD and NVE proliferative lesions in order to determine whether your PDR is adequately controlled.

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Bay Area Retina Associates is a group practice of retinal surgeons. All members of the group are board certified by the American Board of Ophthalmology and have completed fellowship training in the medical and surgical care of retinal diseases. All BARA surgeons have expertise in the treatment of common diseases such as AMD, diabetic retinopathy and retinal detachment, as well as rare diseases. BARA physicians see patients in eight offices around the East Bay, a community we have served for almost 40 years.