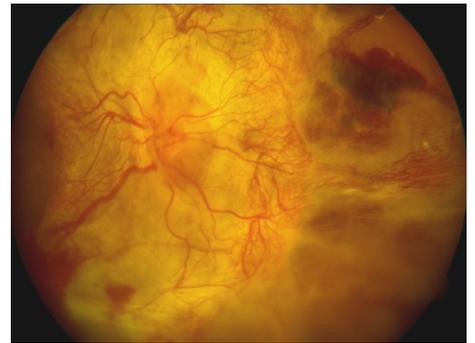


# Proliferative diabetic retinopathy

Proliferative diabetic retinopathy is a serious complication of diabetes mellitus. Damage to the retinal blood vessels causes release of a chemical mediator known as *VEGF* which causes abnormal new blood vessels to grow and proliferate like weeds. These new blood vessels may leak and bleed, causing vision loss. If these vessels continue to grow, they may cause scar formation and pull the retina off the wall of the eye.



## What are the signs and symptoms?

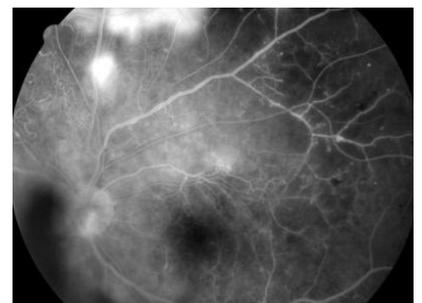
Proliferative Diabetic Retinopathy (PDR) often occurs without any early warning signs, which is why regular retinal examination is critical in patients with diabetes.

Bleeding from abnormal blood vessels may be seen as floaters in the vision, or as dramatic vision loss if a large amount of bleeding occurs suddenly. This blood may clear on its own over weeks or months, and sometimes the blood does not clear spontaneously in which case surgery is required.

Gradual vision loss may occur from scar formation on the retina. The scarring can cause traction on the retina resulting in loss of vision. Surgery may be required to remove the scar tissue.

## How is proliferative diabetic retinopathy detected?

Proliferative diabetic retinopathy is generally diagnosed by an eye care professional. Diagnostic imaging is sometimes needed. This 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). All of these tests have almost no side effects and are essentially painless.



▲ Fluorescein angiogram showing leakage in proliferative diabetic retinopathy.

**BayAreaRetinaAssociates**

*Diseases and Surgery of the Retina and Vitreous*



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## How is proliferative diabetic retinopathy treated?



▲ Photograph of a retina after PRP laser.

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 improving the flow of oxygen to the central retina, which is most important for everyday vision. The application of laser also decreases 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.

**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.

**Anti-VEGF therapy:** This new form of therapy causes stabilization and temporary shrinkage of the new blood vessel formations, thus decreasing the likelihood of bleeding. The medicine is injected into the eye in the office after numbing medicines are given. The anti-VEGF medication has a temporary effect and may need to be repeated periodically depending on the response to treatment. This treatment is sometimes used prior to vitrectomy surgery or in combination with laser.

## Prevention of proliferative diabetic retinopathy

The development of diabetic retinopathy is related to the severity and length of time with diabetes. Control of blood sugar and blood pressure are of paramount importance in preventing diabetic retinopathy. Additionally, it is extremely important to avoid cigarette smoking. Smoking significantly increases the risk that a diabetic patient will develop diabetic retinopathy. Finally, periodic eye exams by an eye care professional are the best way to preserve vision. Early detection of retinopathy followed by appropriate treatment reduces the chance of blindness.

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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 Academy of Ophthalmology and have completed fellowship training in vitreoretinal surgery. BARA surgeons have expertise in the treatment of retinal detachment, diabetic retinopathy, age-related macular degeneration, macular hole, epiretinal membrane, and retinal vascular disease. BARA physicians see patients in eight offices and perform surgery at several hospitals and surgery centers around the East Bay.