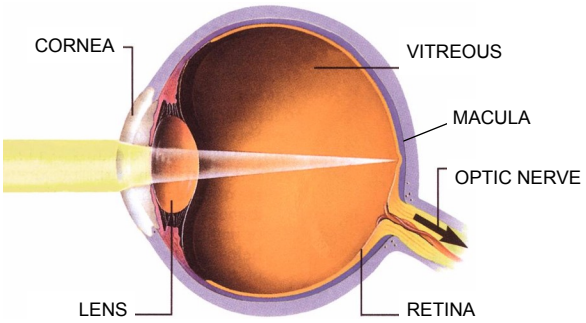
Diabetic Retinopathy: The Big Picture

Who gets diabetic retinopathy?

Diabetes affects about one fifth of the American adult population, and diabetic retinopathy is the leading cause of legal blindness in this group. Diabetes affects the eyes in the same way that it affects the kidneys and other organs: small blood vessels are damaged and over the years, this can result in permanent tissue damage.

Vision loss in diabetes is due primarily to damage in the retina. The retina is like the film of the camera. Just as focusing the lens of a camera will not create a clear picture if the film is damaged, getting a pair of glasses will not improve the vision if diabetes has damaged the retina. Diabetes causes even more damage when combined with high blood pressure, so controlling both is important to prevent blindness.

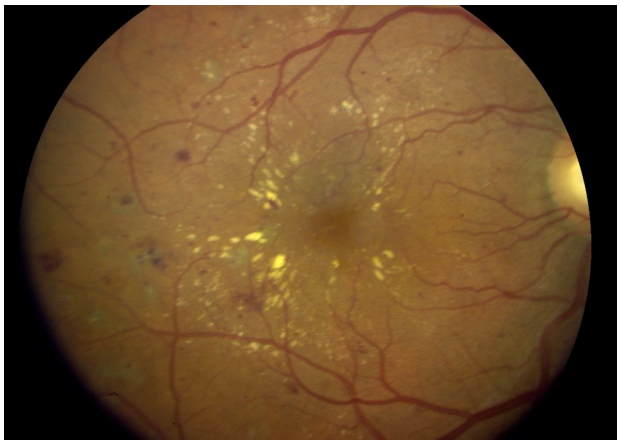


Diabetic retinopathy is more common in patients with poorly controlled diabetes and patients with diabetes for more years. Diabetic retinopathy may already be present at the time of diagnosis of adult onset (Type II) diabetes.

Diabetic retinopathy begins long before the vision is affected. Regular examination of the retina is important to identify and treat diabetic retinopathy before vision loss occurs. Once the vision is affected, treatments can often improve the vision, but vision may never return to normal even with treatment.

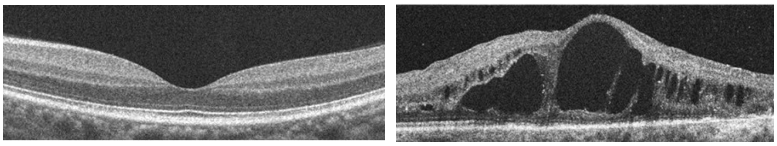
Diabetic retinopathy causes vision loss in three main ways:

- Blood vessels begin to leak fluid, like a garden hose with holes in the side. This fluid collects in the retina and causes swelling, called ***diabetic macular edema***. Central vision may be reduced.
- Abnormal blood vessels grow out of the retina into the middle of the eye. These blood vessels may break and bleed into the middle of the eye, or they may continue growing and start pulling the retina off the wall of the eye. This is called ***proliferative diabetic retinopathy***.
- Blood vessels may become blocked and starve the retina of oxygen. If this process, called ***ischemic retinopathy***, continues long enough, the retina may permanently lose function.



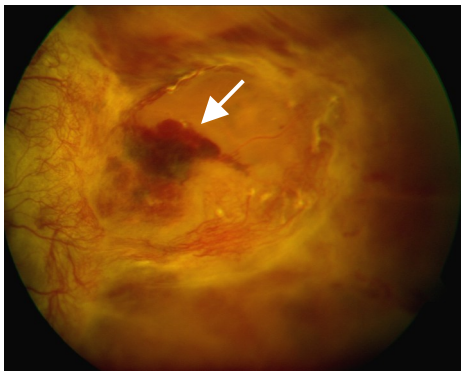
◀ Photograph of an eye with diabetic macular edema. The red spots are blood vessel changes and small bleeds. The yellow patches are fat that has leaked out of the retinal blood vessels.

▼ Optical coherence tomography shows a normal retina (left) and a retina swollen by diabetic macular edema (right).



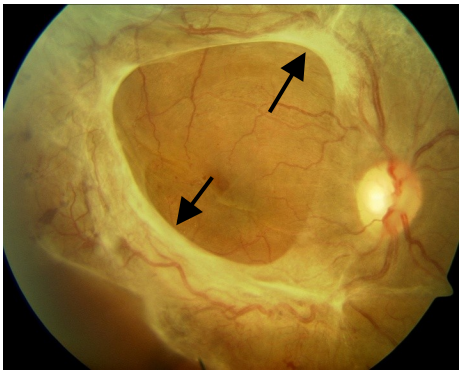
How is diabetic retinopathy treated?

- ***Controlling blood sugars and high blood pressure*** is critical to the treatment of all forms of diabetic retinopathy. Without good control of blood sugar and blood pressure, all other treatments are less likely to have positive outcomes.
- ***Diabetic macular edema*** is treated with laser or injections of medicine into the eye in order to stop the leakage of fluid. In some cases, surgery may help as well.
- ***Proliferative diabetic retinopathy*** is treated with laser photocoagulation. In some cases, surgery may be required to remove blood in the eye or to remove scar tissue pulling the retina away from the wall of the eye (tractional retinal detachment).



◀ Proliferative diabetic retinopathy can result in bleeding from abnormal blood vessels on the surface of the retina.

▶ When abnormal blood vessels continue to grow, they can turn into scar tissue that pulls the retina away from the eye wall.



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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 seven offices and perform surgery at several hospitals and surgery centers around the East Bay.