

# *Diabetic Retinopathy*

## *About Diabetes*

Diabetes is one of the leading causes of visual loss in the United States. Visual problems become more likely the longer that diabetes has been present. Given enough time, about 85% of diabetics will have some eye problems. Over many years, good blood sugar control does limit, but does not prevent, eye problems.

Diabetes affects the eye in two main ways. First, excess sugar can be trapped in the eye's lens causing blurry vision, a change in glasses prescription, and cataracts (cloudy lens). Diabetics frequently require more changes in their glasses prescription and need earlier cataract surgery than the average patient. Second, diabetes causes the smallest blood vessels in the back of the eye to close down or leak. Damage here, in the retina, causes the most severe threat to vision.

## *What is Diabetic Retinopathy?*

The eye is like a tiny camera, and the retina is the “film” in the back of this camera. The center of the retina is a tiny spot called the “macula”, which supplies all of our sharp, central vision. The earliest form of diabetic retinal damage is called “background diabetic retinopathy”. About 50% of patients with diabetes for 10-15 years have some signs of this such as bleeding, or swollen pockets within the retina. If these swollen areas affect the macula, dim or



blurry vision may result.



If the eye disease worsens, areas of the retina may not get enough blood. The eye responds by growing thin new vessels. This is called “proliferative diabetic retinopathy”. Unfortunately, these new vessels frequently break open and bleed, filling the eye with blood and stimulating scar tissue to grow, sometimes leading to retinal detachment. The early stages of this condition can be treated with the laser. More advanced disease often requires invasive surgery, called “vitrectomy”, which involves removal of blood, scar tissue, and abnormal vessels within the eye and repair

of retinal detachment.

## *How is Diabetic Retinopathy detected?*

In some cases, advanced damage may be present without the patient even being aware. Also, most treatments for diabetic eye disease work better at preventing and controlling the diabetic retinopathy than at reversing it once it is well established. Because of this, it is very important for diabetics to have a regular, complete eye examination that should include drops to dilate the pupil. We recommend regular eye examinations, in most cases once a year, to detect diabetic eye problems before the patient recognizes visual problems. We

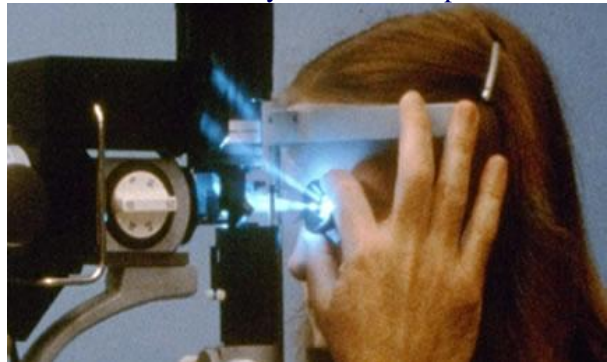


routinely report information about your exam to your primary care physician and/or diabetes specialist to keep them updated on this part of your health. In between scheduled eye examinations, patients should report any changes in their vision, such as increased fuzziness, new floating spots, restricted side vision, or pain.

In addition to regular eye examinations, the diabetic patient should work with his or her physicians to control the blood sugar level and keep blood pressure under control. Tests to determine how well the kidneys are working may also be needed. Over years, this has been shown to reduce the severity of diabetic complications. Diabetic patients who become pregnant should have even more frequent examinations of the retina.

### ***How is Diabetic Retinopathy treated?***

When significant retinopathy is detected, a special test called fluorescein angiography is sometimes performed. This is a photographic test of the retina and does not involve X-rays. After color pictures are taken, a yellow dye called fluorescein is injected into the arm vein and photographed as it passes through the retinal vessels. This provides a very detailed "road map" of the retina, identifying any weakened or abnormal blood vessels. This test is helpful in deciding whether laser treatment is needed and in guiding that treatment.



Laser surgery is the most common treatment for diabetic retinopathy. Laser is a highly focused beam of light that can be used to cauterize leaky blood vessels or stimulate abnormal new vessels to shrink and stop bleeding. Laser surgery is done in the office, using anesthetic eye drops or an anesthetic injection. Usually laser involves little or no discomfort, and patients go home immediately after treatment. Post-operative discomfort, if it occurs, is usually controlled with non-prescription pain medication such as Tylenol TM or Advil TM.

Laser surgery for retinal swelling is called focal or grid laser therapy. This is effective in preventing further vision loss and may result in some visual improvement. Once this treatment has been performed, it may take several weeks or months for the swelling to fully drain away. Occasionally, more leaky spots develop requiring repeated focal treatment. Abnormal new vessel growth can be treated with panretinal photocoagulation. In this type of laser surgery, a large number of laser spots are placed in the side portions of the retina. This causes abnormal new vessels to shrink and reduces the risk of vision loss from bleeding or retinal detachment.

Laser surgery is designed to stabilize or improve vision. It cuts in half the risk of severe vision loss. Even if vision is not improved, laser therapy may help to limit visual loss that would have occurred without treatment. Some patients experience side effects of laser, including mild loss of side vision, blurry vision or spots in the vision, difficulty seeing in dim light, or sensitivity to light. These side effects, when noticed at all, are usually mild and temporary, but on occasion they may persist. Even then, this is far better than the serious visual loss that can result without laser treatment.

Although laser treatment is very successful at stabilizing diabetic retinopathy, it is not a cure. Sometimes, damage may progress despite laser treatment. This damage can include persisting hemorrhage in the central jelly, called Vitreous Hemorrhage (shown at right), or scar tissue and detachment of the retina. Vitrectomy surgery may be needed if further hemorrhage or damage to the retina occurs in spite of laser or if laser has not been performed before these more serious problems occur. This is an operation in which the jelly in the back of the eye along with any scar tissue or blood is removed. This is usually a very successful procedure that is well tolerated by the eye. Your doctor can discuss your case with you individually.



If you have any questions, please call us at 419.578.2020 or toll free at 1-888.322.7070 .