



# Diabetes and Eye

Diabetes is a disease that affects many organs of the body like eyes, kidney, nervous system, heart, limbs etc. Diabetes causes many changes in the eye. The most significant vision threatening consequence of diabetes in the eye is diabetic retinopathy and its complications. Untreated, it may cause blindness. However, timely diagnosis and proper management of this condition can help the patients maintain a useful vision and lead a socially productive life.

### How does diabetes affect the eye?

Diabetes may lead to frequent fluctuations in vision and change in glasses power. It may also lead to cataract at a younger age, glaucoma, decreased vision due to involvement of the optic nerve, temporary paralysis of the eye muscles and thus double vision, Diabetic Retinopathy etc.

### What is diabetic retinopathy?

Retina is the innermost layer at the back of the eye. The images of what we see are formed on this light sensitive layer and are then transmitted to the brain by optic nerve. Long standing Diabetes, especially after 5 years of disease, causes some changes in the retina and thus decreasing the vision.

Initially the small vessels of the retina are affected. They leak fluid and blood in the retina causing tiny hemorrhages and swelling of the retina, and thus decrease vision. In the later stages, the small blood vessels of retina close and lead to formation of new blood vessels. These new vessels are very fragile and bleed very easily to cause bleeding into the eye (vitreous hemorrhage). This bleeding causes severe vision loss, and many a times leads to secondary changes in the retina and eye to damage it beyond repair.

### What are the risk factors for diabetic retinopathy?

Though any patient with diabetes may develop Diabetic Retinopathy, the longer the person has diabetes, the greater are his/her chances to develop diabetic retinopathy. Majority of the patients who have had diabetes for more than 5 years do have some changes of diabetic retinopathy. The other risk factors are high blood pressure, anemia, kidney diseases, and pregnancy.

### Can we prevent Diabetic Retinopathy?

There is no treatment that can prevent diabetic retinopathy altogether. But it has been proven that a good control of diabetes can delay and slow down the rate of progress of diabetic retinopathy and its complications. Besides a good control of blood sugar, one must exercise regularly, keep the blood pressure under control, and avoid smoking.



### Why is Early Detection important?

The vision lost due to Diabetic Retinopathy is not regained, and the aim of the treatment is to preserve the vision and not to improve the vision. In the earlier stages of the disease when the vision is not affected, there may be no symptoms

perceived by the patient. It is best to detect the disease at this early stage before significant vision loss has occurred, and perform a timely treatment, as and when required. This early detection can only be achieved by periodic evaluation (every 6 months to 1 year) of the eyes of every diabetic patient by an eye surgeon, preferably a retina specialist, even if they have no eye related symptoms.

### What is Fluorescein Angiography?

It is test in which a series of photographs of the retina are taken with the help of a special camera. These photographs are taken after giving the patient an injection of a yellow dye. This dye reaches the retina through the blood stream and helps in evaluating the blood vessels of retina more clearly. This test helps the doctor to determine which areas are to be treated with laser. It is also done after laser treatment to monitor the progress of disease and to determine the need of further laser.

### What is the Treatment for diabetic retinopathy?

The treatment required depends upon the stage of the disease. In the very initial stages, just periodic follow ups are advised to look for progression of disease. Laser treatment is recommended when there is significant swelling in the macula (maculopathy), or when there are significant new blood vessels in the retina or iris.

In advanced stages with vitreous hemorrhage, retinal detachment etc., surgery (Vitreotomy) may be required.

### What is Laser treatment?

Laser is a highly concentrated light that is beamed onto the retina to treat the desired area. It is a painless OPD procedure that does not require admission. It may require more than one sitting to complete the treatment.

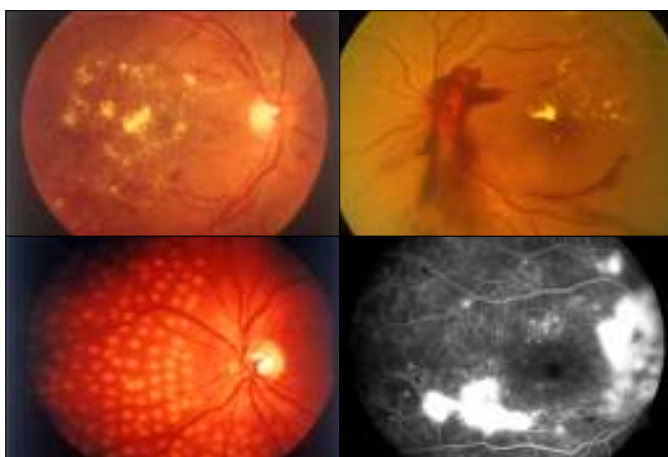
It is important to remember that the laser treatment is done to prevent or retard further loss of vision and not to improve the vision. It is highly effective, and a timely treatment can prevent blindness in about 80% of the treated patients.

### What are the Side Effects of Laser?

The laser treatment may have a few side effects like decrease in the peripheral field of vision, decrease in color vision and difficulty in seeing at night. Sometimes it may also reduce the central vision. This is usually temporary but sometimes this may not improve. Though no treatment is without any side effects, the risks of the laser treatment are far less than the risk of not having the treatment.

### What Surgery is done for diabetic retinopathy?

In some patients in which the disease is not controlled by the laser, or who have reached the advanced stage of disease, vitrectomy and additional surgical procedures may be required. In vitrectomy surgery, the retinal surgeon removes the blood filled vitreous and replaces it with a fluid, using very delicate instruments with the help of a microscope.



**Disclaimer:** Information published here is for educational purposes only and is not intended to replace medical advice. If you suspect that you have a health problem, please consult your doctor immediately.

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