

# DIABETES & EYE CARE

We cannot prevent diabetes in spite of lifestyle changes & healthier living but we can certainly prevent vision loss due to diabetic retinopathy. High levels of blood sugar can lead to early **Cataract development** and or can lead to a condition known as **Diabetic Retinopathy**.

## Diabetic Retinopathy

Nine out of ten people with diabetes will over a period of time eventually develop a complication that affects the eyes known as diabetic retinopathy. This condition affects the retinal blood vessels and can lead to blindness, however if diagnosed and treated early much of this vision loss can be prevented.

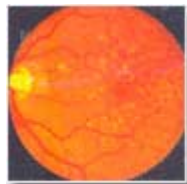
## How does Diabetic Retinopathy damage the retina ?

The retina is like the film in a camera. It is the seeing tissue of the eye. When the focused light hits the retina, a picture is created and sent to the brain through the optic nerve (the nerve of the eye), thus giving us vision.

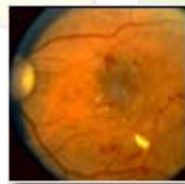
Retina has two parts: The peripheral retina and central Macula. Macula being the central part is capable of producing sharp and clear image. These clear images enable us to read, write and do all fine work.

Conditions like Diabetes, Age related Macular degeneration and Macular holes can damage Macula.

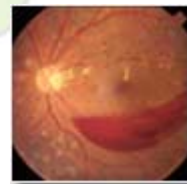
Diabetic retinopathy occurs when diabetes damages the tiny blood vessels in the retina. At this point, most people do not notice any changes in their vision. Some people develop a condition called macular edema. It occurs when the blood vessels leak fluid and lipids onto the macula, (The central part of the retina that lets us see in detail). The fluid makes the macula swell, thus blurring the vision.



**Normal retina**



**Early Diabetic retinopathy**



**Bleeding on Retina**

As the disease progresses, it enters its advanced, or proliferative stage. Fragile, new blood vessels grow along retina and the clear, gel-like vitreous that fills the inside of the eye. Without timely treatment, these new blood vessels can bleed , cloud vision and destroy the retina.

## What are the symptoms ?

Diabetic retinopathy often has no early warning signs. At some point, through, patient may have macular edema. It blurs vision. In extreme cases, a person will only be able to tell light from dark in that eye. It may take the blood anywhere from a few days to months to clear.



**Normal retina forming clear image**



**Blurred retina in case of Diabetic retinopathy**

## How is it diagnosed ?

By detailed dilated eye examination and by doing specialized tests like Fluorescein Angiography and OCT (Optical Coherence Tomography). Angiography and OCT decide the stage of diabetic retinopathy and treatment of diabetic retinopathy.

## Digital Fluorescein Angiography ?

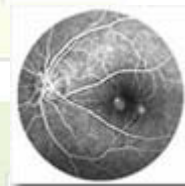
In this test, a special dye is injected & pictures are then taken as dye passes through the blood vessels in the retina. This test is done to find out stage of diabetic retinopathy (to find the leaking blood vessels) and decide further line of treatment. Rushabh Eye Hospital & Laser Centre has Latest Digital Angiography .



**Fundus Camera**



**Color Photograph of Retina**



**Digital Angiograph**

## Optical Coherence Tomography (OCT)

OCT can measure retinal thickness precisely and repeatedly. It can measure minute changes, making it ideal for follow ups in retinal diseases, such as diabetes. Rushabh Eye Hospital & laser Center is equipped with most advance Zeiss -OCT system.



## How is Diabetic Retinopathy treated ?

The treatment for diabetic retinopathy include

- ❖ Laser treatment
- ❖ Special Injections like Inj. Avastin or
- ❖ Surgery (Virectomy).

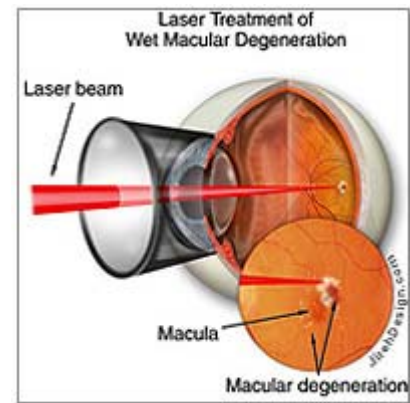
These are very effective in reducing vision loss from the disease. In fact, even people with advanced retinopathy have a 90% chance of keeping their vision when they get treatment before the retina is severely damaged.

## Laser Treatment

Is one of the most important and is one of the most widely used techniques. In the early or non-proliferative stages the laser is used to seal leaking areas from the blood vessels. this is called as Focal Laser Therapy.

## Virectomy

A Virectomy is performed if there is a long standing non absorbing vitreous hemorrhage (blood inside the eye).



## What can we do to prevent vision of a patient with diabetic retinopathy ?

- ❖ It has been proved that better control of blood sugar levels slows the onset and progression of retinopathy and lessens the need for laser treatment or surgery.
- ❖ Co-existing high blood pressure can speed up diabetic changes in the eye, so blood pressure also should be kept under control.
- ❖ Stop smoking : smoking causes narrowing of the blood vessels, which can aggravate the diabetic changes in the eye.

**Have regular eye checkups : All patients with diabetes should have an thorough eye examination through dilated pupils at least once a year. If patient has severd retinopathy, he/she may need to have a eye examination more often.**