



# Diabetic Retinopathy

## What is Diabetic Retinopathy?

People with diabetes can have an eye disease called Diabetic Retinopathy, which is caused by high blood sugar levels damaging the vessels in the retina.

The retina is the light-sensitive tissue at the back of the eye. A healthy retina is necessary for good vision.

When someone has Diabetic Retinopathy the blood vessels in the retina can swell and leak. In some cases they can close, stopping blood from passing through. Sometimes also new abnormal blood vessels may grow on the retina.

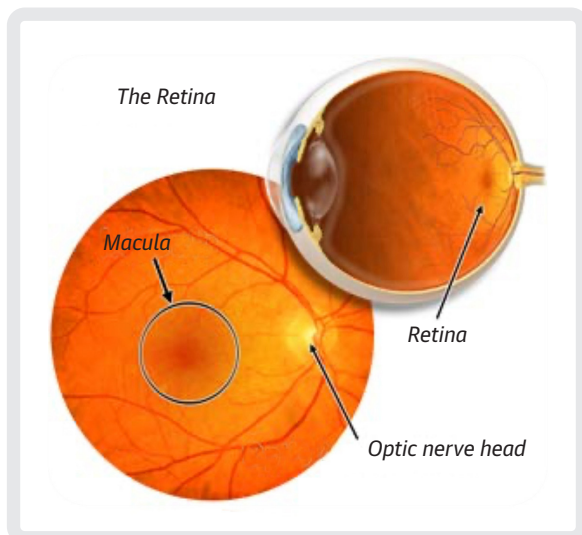
All of these changes can steal vision.

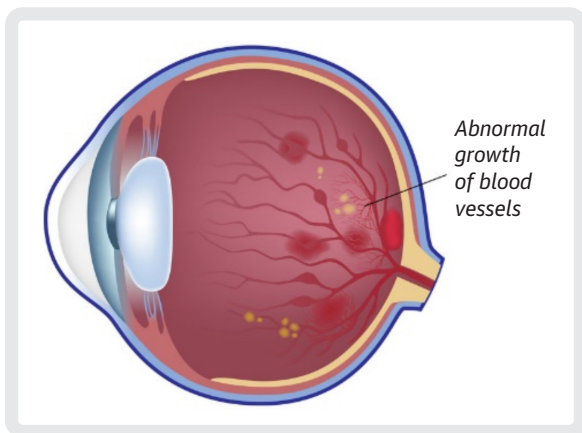
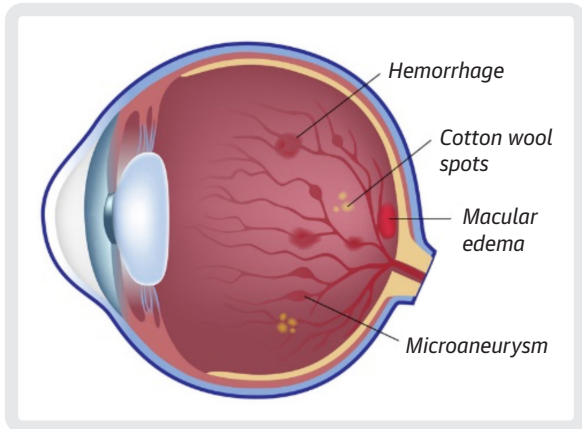
## Diabetic Retinopathy Symptoms

Patients can be unaware they have Diabetic Retinopathy as there are often no symptoms in its early stages.

Diabetic Retinopathy usually affects both eyes and, as it gets worse, you will notice symptoms such as:

- An increasing number of floaters
- Blurry vision
- Vision changing from blurry to clear
- Blank or dark areas in your field of vision
- Poor night vision
- Colours may appear faded or washed out losing vision





## Stages of Diabetic Eye Disease

There are two main stages of diabetic eye disease:

### NPDR (Non-Proliferative Diabetic Retinopathy)

- This is the early stage of diabetic eye disease. Many people with diabetes will have NPDR.
- Tiny blood vessels in the retina leak, causing the retina to swell. When the macula swells it is called macular oedema. This is the most common reason people with diabetes lose their vision.
- With NPDR, blood vessels in the retina can close off. This is called macular ischemia. When this happens, blood cannot reach the macula. Sometimes tiny particles called exudates form in the retina. These can also affect your vision.

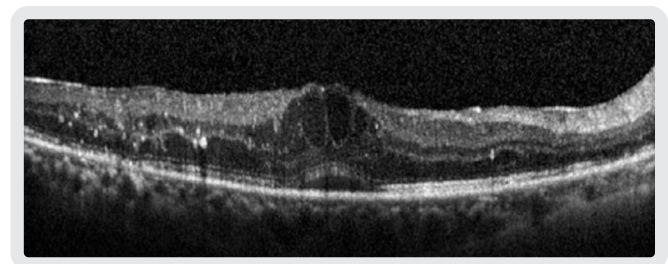
### PDR (Proliferative Diabetic Retinopathy)

- In this case, the retina starts growing new blood vessels. Known as neovascularisation, this is a more advanced stage of diabetic eye disease.
- These fragile new blood vessels often bleed into the vitreous. If there is a small amount of bleeding, you may experience a few dark floaters in your vision. If there is a lot of bleeding it may block all vision.
- The new blood vessels can also form scar tissue. Scar tissue can cause problems with the macula and, in some cases, lead to a detached retina.
- PDR is a very serious condition. It can steal both your central and peripheral (side) vision.

## How do we test for Diabetic Retinopathy?

The first step is for your specialist to look through a special lens to see the inside of your eye. Drops are used to dilate (widen) your pupil.

Your specialist may do a Fluorescein Angiography to see what is happening with the retina. Yellow dye (called fluorescein) is injected into a vein, usually in your arm, and a special camera takes a photo of the retina as the dye travels throughout the eye's blood vessels. The image shows if any blood vessels are growing, blocked or leaking fluid.



Optical Coherence Tomography (OCT) is a non-invasive imaging test using light waves to take cross-section pictures of your retina. With OCT, your specialist can see each of the retina's distinctive layers and measure any swelling in the macula.

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## Diabetic Retinopathy Treatment

Your treatment is based on what your Ophthalmologist sees in your eyes. The treatment options may include:

- **Medical control.** Controlling your blood sugar and blood pressure can reduce vision loss.
- **Medicine.** Anti-VEGF medication is commonly used to treat Diabetic Retinopathy. This includes medicines such as Avastin, Eylea, and Lucentis. Anti-VEGF medication helps reduce swelling of the macula, slow vision loss and perhaps improve vision. The drug is given by injections in the eye. Steroid medicine is another option to reduce macula swelling. This is also given as injections in the eye. Your Ophthalmologist will recommend how many injections are needed.
- **Laser surgery.** Laser surgery may be used to help seal off leaking blood vessels and reduce swelling of the retina. Laser surgery can also help shrink blood vessels and prevent them from growing again. Sometimes more than one treatment is needed.
- **Vitrectomy.** In advanced cases of PDR, your eye specialist may recommend a vitrectomy. This involves surgery where your Ophthalmologist removes vitreous gel and blood from the leaking vessels in the back of your eye, which allows light rays to focus properly on the retina again. Scar tissue can also be removed from the retina during this procedure.

## Preventing vision loss from Diabetic Retinopathy

- If you have high blood pressure or kidney problems ask your GP about ways to manage and treat these problems. If you have diabetes, talk with your GP about controlling your blood sugar.
- See your Ophthalmologist regularly for dilated eye exams. Diabetic Retinopathy can be found before you begin to notice any vision problems.
- If you notice vision changes in one or both eyes, call your Ophthalmologist right away.
- Get treatment for Diabetic Retinopathy as soon as possible. This is the best way to prevent vision loss.

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