

Diabetic Eye Disease - Patient information

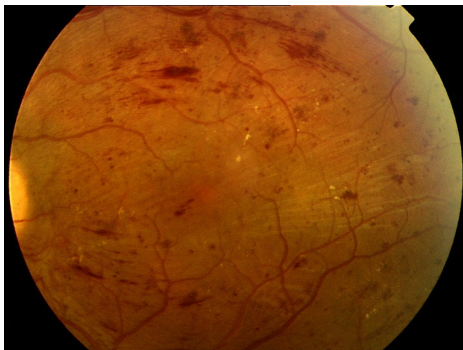
What is Diabetic Eye disease?

The eye is like a camera with lenses at the front and a light sensitive film at the back - the retina, at the centre of the retina lies the macula which gives us highly focused colour vision.

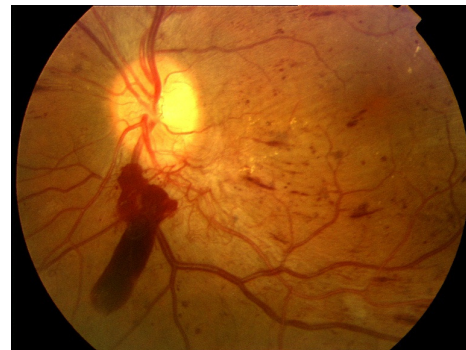
Diabetic retinopathy is caused by blockage in small blood vessels in the retina. Over many years a there is a build up of abnormal proteins in the wall of the blood vessels. Eventually the blood vessels start to leak and then to close up. As the blood vessels close, the retina releases a hormone called vascular endothelial growth factor (VEGF).

The first signs of diabetic eye disease are microaneurysms, retinal haemorrhage and retinal exudates (Background diabetic retinopathy). After several years, new blood vessels (proliferative diabetic retinopathy) can grow out of the diseased retina, these can bleed into the gel of the eye (vitreous haemorrhage), which can reduce the vision.

Other changes in the retinal include leakage at the macula, and sometimes a failure of blood flow to the macula (ischaemic maculopathy).



ackground
Diabetic retinopathy



B
Proliferative
Diabetic Retinopathy

Who gets diabetic eye disease?

Most people with diabetes eventually get some signs of diabetic eye disease, however these changes can be accelerated if the blood sugar, blood pressure and cholesterol are too high. In general it takes 10-15 years from the onset of diabetes for problems to occur.

What are the symptoms of a Diabetic Eye Disease?

The initial symptoms of diabetic eye disease, include blurring of central vision, floaters and sometimes sudden visual loss caused by bleeding. However often the symptoms are mild until the disease is severe.

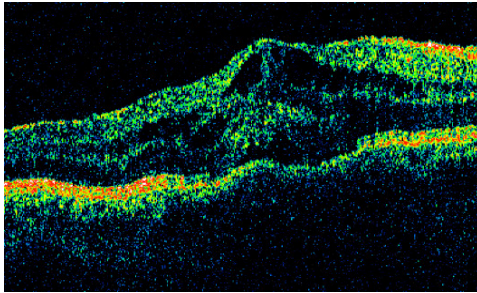
Is Screening Important?

Diabetic retinopathy can occur without symptoms, so a comprehensive screening service has been set up throughout the UK. It is a good idea to have retinal photographs on an annual basis to check on the diabetic eye disease. The photographs are screened by highly trained graders and any suspicious diabetic retinopathy is then referred to the Eye Unit for further examination by specialised doctors. We have found that early detection and treatment are key to successful outcomes in patients with diabetic eye disease.

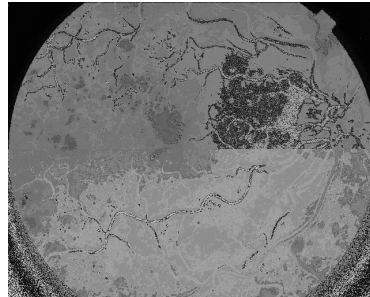
How is diabetic retinopathy diagnosed?

Diabetic eye disease is diagnosed through clinical examination fluorescein angiography - to look at the diseased blood vessels and with optical coherence scanning - to assess retinal thickness. Early diabetic retinopathy is diagnosed via your local diabetic eye screening service.

An OCT of diabetic macular oedema



A fluorescein angiogram
Of macular ischaemia



Why do I need my pupils dilated?

Dilation of the pupils helps us to see and photograph the back of the eye. Unfortunately the vision is often blurred for 3-4 hours, so driving is difficult during that time.

How is proliferative Diabetic Retinopathy treated?

In proliferative diabetic eye disease, laser is used to treat damaged retina and to reduce the release of VEGF. This is called pan-retinal laser treatment (PRP) - or scatter laser treatment. It causes closure of the new blood vessels and stops them from bleeding.

If blood seeps into the vitreous surgery is required to remove it, laser treatment is then used to close the blood vessels and reduce the chance of VEGF release. The surgery is generally successful, however cataract can form post surgery and some eyes re-bleed.

How is Diabetic Maculopathy treated

The mainstay of treatment for diabetic maculopathy has been, focal laser around the macula area. Good research shows this slows visual loss although does not typically improve vision. Triamcinolone injections to reduce the amount of fluid at the macula, this works for some patients although repeat injections may be necessary. New treatments such as long acting steroids (Posudex) and other treatments such Avastin and Lucentis may also help some patients. Some

patients develop ischaemic maculopathy with a drop of blood flow to the macula, at present there are no good treatments for this.

Are there any risks of treatment?

Some patients develop a retinal detachment, which can reduce vision dramatically. If detected early these can also be operated on and vision restored. Other risks include infection of the eye, and reoccurrence of the Diabetic Eye Disease.

Is a Diabetic Eye Disease the same as macular degeneration?

No, Diabetic Eye Diseases and macular degeneration are two separate and distinct conditions. Macular degeneration is a condition affecting the tissues lying under the retina, while a Diabetic Eye Disease involves damage from within the eye.

What are the chances of a Diabetic Eye Disease in the other eye?

Diabetic eye disease typically affects both eyes, there is some evidence that the right eye is more commonly effected.

Can I prevent diabetic eye disease from forming?

There is good evidence that keeping a tight control of blood sugar, blood pressure and cholesterol, can prevent diabetic retinopathy and slow its progression once it has started. Stopping Smoking is also important.

This is a key area of research for the [Retinal Research Foundation](#), we are looking into whether OCT helps in screening and whether colour vision can be used instead of costly photography.

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