Manchester University
NHS Foundation Trust

Manchester Royal Eye Hospital
Medical Retinal Services

Information for Patients

Diabetic Eye Disease

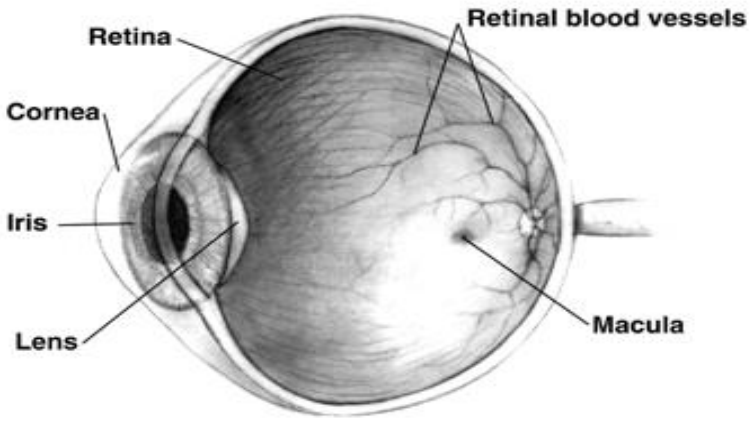
This leaflet sets out to answer some of your questions about diabetic eye disease. You may wish to discuss this information with a relative or carer.

What is diabetic eye disease?

Diabetic eye disease refers to a group of eye problems that people with diabetes may face as a complication of diabetes. All can cause severe vision loss or even blindness. Many people who have diabetes are at risk of eye problems, including diabetic retinopathy, temporary blurring of your vision, cataracts and glaucoma.

What is the retina?

The retina is a light sensitive tissue that coats the inside of the eye. Light is focused onto a tiny area of the retina called the macula which is responsible for our sharp, detailed, central vision and also gives much of our ability to see colours. The rest of the retina gives side vision (peripheral vision). In front of the retina the eye is filled with a clear substance called the vitreous gel. The retina converts the light into electrical signals that travel along the optic nerve to your brain.



What is diabetic retinopathy?

Blood vessels bring oxygen and nourishment to your retina. In diabetic retinopathy the blood vessels at the back of your eye may be damaged in a number of ways. This can affect your sight. This is known as diabetic retinopathy. Diabetic retinopathy progresses with time but may not cause symptoms until it is too late to give corrective treatment.

Who gets diabetic retinopathy?

All people with diabetes are at some risk of getting diabetic retinopathy. This is true whether your diabetes is controlled by diet, tablets or insulin. You are at greater risk if:

- You have had diabetes for a long time.
- Your diabetes is poorly controlled.
- You have high blood pressure.
- You are on insulin treatment.

What does diabetic retinopathy look like?

Background retinopathy

The earliest changes are called ‘background retinopathy’. Small changes develop on the blood vessels and look like tiny red dots. These are called micro aneurysms. Larger red dots are the result of retinal haemorrhages and lie within the retina.

Background retinopathy does not affect your sight and does not need treatment. However, you should make sure that you go for screening every year. As time goes by, your blood vessels may become constricted and the retina may become starved of oxygen and nutrition.

Different signs can be seen in the retina at different stages. This progression can lead to ‘pre-proliferative diabetic retinopathy’.

Proliferative diabetic retinopathy

At this stage you may develop new blood vessels on the retina. This is called ‘proliferative diabetic retinopathy’. These new blood vessels are abnormal and fragile. By themselves, these blood vessels do not cause symptoms or vision loss. However, they have thin fragile walls. At this stage your sight is at risk as the vessels may bleed or may develop scar tissue. This can pull the retina away from the underlying layers of the eye, causing a ‘traction retinal detachment’.

Diabetic maculopathy

You may also suffer from two different types of change to the blood vessels in the macula. This is called ‘diabetic maculopathy’. The commonest change is that the blood vessels become leaky. Fats and fluid that are normally carried along in the bloodstream may then leak into the macula. Fats that have leaked into the retina are called ‘exudates’.

Leaking fluid causes water logging in the retina and is called ‘oedema’. Oedema at the centre of the macula will cause you to lose some sight and you may require laser treatment. Occasionally, the blood vessels in the macula become so constricted that the macula is starved of oxygen and nutrition, causing your sight to get worse. This is called ‘ischaemic maculopathy’ and it does not usually respond to any type of treatment.

How will I know if I have diabetic retinopathy?

Diabetic retinopathy does not usually cause a loss of sight until it has reached an advanced stage. Even sight threatening retinopathy that is close to affecting your sight may not cause symptoms.

Diabetic retinopathy is detected by examining the back of your eyes to look at your retina. The healthcare professional that looks after your diabetes should have made arrangements for you to go for diabetic retinopathy screening at least every year. This will be done by taking photographs of the back of your eye. Doctors or Optometrists (opticians) can also check your retina using other special equipment.

You must get professional advice if you have any new sight problems such as:

- Your sight suddenly gets worse, completely blurred, distorted or you lose all or part of your vision.

- You get a sudden shower of floaters or cobwebs in your sight.

Why is diabetic retinopathy important?

- Diabetic retinopathy can affect your sight and is still a significant cause of blindness.

- Early treatment for sight threatening retinopathy reduces the risk of you losing your sight but needs to be given at the appropriate stage and ideally before your vision has been affected.

What are the complications of diabetic retinopathy?

- **Temporary blurring**

The unusual changes in blood sugar levels resulting from diabetes can affect the lens inside the eye. This can result in blurring of vision which comes and goes across the day. This blurring may be one of the first symptoms of diabetes although it may also occur at any time when your diabetes is not well controlled. Once your diabetes is controlled most people find this variable blurring goes away.

- **Cataracts**

Cataracts are more common in people with diabetes than the rest of the population and may also occur at an earlier age in people with diabetes than

others. A cataract is cloudiness in the lens of the eye which causes the vision to become cloudy, blurred or dim and faded. This is usually treatable.

- **Glaucoma**

A person with diabetes is nearly twice as likely to get glaucoma as another adult. Glaucoma is a condition where pressure within the eye causes damage to the optic nerve and so impairs vision or causes blindness. This is usually treatable with eye drops or surgery.

Treatment for diabetic retinopathy

If you develop proliferative retinopathy or your eye specialist thinks you are very close to developing it you will be advised to have laser treatment.

The aim of laser treatment is to prevent bleeding or to prevent the growth of new blood vessels. The laser can be used in two ways:

- **Localised laser treatment**

When individual vessels or small groups of vessels are leaking, the laser can seal them. This stops the bleeding and helps reduce the swelling of the retina.

- **Panretinal laser treatment**

If new vessel growth (neo-vascularisation) has been detected you may need more extensive laser treatment. The aim is to treat large areas of the peripheral retina with the laser. This treatment stops the retina from producing the growth factors that stimulate new blood vessels to grow. If the treatment is successful, the new vessels shrink and disappear over a few months.

Effect on your vision after the laser treatment

When large areas of the peripheral retina are lasered, the effects on your vision may be significant and your peripheral vision may be quite poor. This may affect your ability to drive safely. Night and colour vision may also be affected.

- **Intravitreal injection**

If you have diabetic maculopathy then your doctor may offer an injection which reduces macular oedema and may improve vision.

- **Surgery**

If you have vitreous hemorrhages, or scar tissue causing retinal detachment, it may be possible for you to have an operation called a vitrectomy. A separate leaflet on the vitrectomy is also available which contains further information in more detail.

If you have a cataract then surgery is offered to remove the lens of your eye which is replaced with a synthetic lens implant.

If you have glaucoma then drops may be given to control the eye pressure.

Dos and Don'ts

Diabetic retinopathy can get worse over time, but the following measures can help you to reduce your risks of developing diabetic retinopathy and to slow the progress of sight threatening retinopathy.

- Control your blood glucose as effectively as possible.
- See your family doctor regularly to check that your blood pressure is not raised.
- Keep your regular screening appointment.
- Get advice if you have a problem with your sight.

For your eyes and general health, you should also have your cholesterol levels checked regularly and not smoke.

What if my sight cannot be fully restored?

Much can be done to help you use your remaining vision. You should ask your eye specialist or optometrist about low vision aids.

If your vision is impaired, it is also worth asking your specialist to help you register as "sight impaired" or "severely sight impaired". This opens the door to expert help and some financial concessions.

For more information and support

If you have any questions about diabetic retinopathy:

Ask your doctor or nurse on (0161) 276 5543 Monday – Friday 8.00 am - 5.00 pm.

Contact your local screening office

www.nscretinopathy.org.uk
www.diabetes.org.uk
www.nhsdirect.nhs.uk
www.rnib.org.uk

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