

Ophthalmology department

Diabetic retinopathy

Information for patients, relatives and carers

Introduction

This leaflet provides information about **diabetic retinopathy**. We hope it will answer some of the questions that you or those who care for you may have at this time. This leaflet is not meant to replace the discussion between you and your clinical team, but aims to help you understand more about what is discussed. If you have any questions about the information below please contact us using the details on the back page.

How does diabetes affect the retina?

Diabetes begins to affect your eyes when your blood glucose levels are often or always too high. There are often no early warning signs when damage initially occurs because the changes are gradual. The changes can then develop in the centre of the retina, known as the macula, which is responsible for fine detailed central vision.

If your blood glucose levels remain high over a period of time it can cause damage to the blood vessels, which allows them to leak into the retina. These are the **early stages of diabetic retinopathy** and, importantly, you may not notice changes in vision at this stage.

A build-up of fluid and blood from these damaged blood vessels within the layers of the macula (known as **macular oedema**) often occurs in patients who already have signs of diabetic retinopathy. This can affect the central vision by making everything you see appear crooked or out of shape, also known as **distortion**. In some cases there is complete loss of part of the vision. This may affect your ability to perform even simple everyday tasks such as reading.

New but weaker blood vessels may also grow, which can bleed into the retina, causing scarring. This is more **advanced diabetic retinopathy** which requires urgent treatment to reduce the risk of partial or full permanent loss of vision.

Almost 5 million people in the UK are believed to be living with diabetes, 90 per cent of whom have type 2 diabetes (Diabetes UK 2021). At least one third of this number has diabetic retinopathy with significant impact on quality of life (McKay et al, 2021).

Prevention

Annual diabetic eye screening, which takes place in community settings, has proven to be highly effective in noticing early changes which prevent any or further vision loss (Amoaku et al, 2020). Introduced in 2003, annual diabetic eye screening has reduced the number of people certified as visually impaired from diabetic retinopathy from 5.5 per cent in 2010 to 3.5 per cent in 2019 (Scanlon, 2021). Therefore, attending these appointments is very important as you can then be referred for a more specialised opinion, observation or treatment if required.

If you notice any changes to your vision between your screening appointments it is essential that you attend your local optician and, if urgent, they will ask you to attend your local eye emergency department as soon as possible. Do not wait for your next eye screening appointment.

Some of the early signs of diabetic retinopathy include:

- floaters
- blurred vision
- distortion

Monitoring and management of blood glucose levels is vital as consistently raised levels are a leading cause of diabetic eye complications and vision loss. Close control and monitoring of blood glucose levels in type 1 or type 2 diabetes have been proven to reduce the risk of retinopathy by up to 30 per cent (Bain et al, 2019). You can check your blood glucose levels at home and establish your target levels with your GP or diabetes specialist team, who should also monitor your HbA1C test – also known as the three-month test.

Blood pressure is also a risk factor as it can affect blood flow. Effective control of blood pressure has been proven to decrease the risk of diabetic retinopathy by at least 30 per cent (Simo-Servat et al, 2019).

Cholesterol is another potential risk. Poor blood circulation caused by raised cholesterol levels can also occur in the blood vessels in the eye and contribute to the increased risk of fluid build-up in the macula. If nutrients cannot reach the eye and waste cannot be removed this can damage the retina.

Your GP will help to manage your condition with you, but, in some cases it may be more difficult to control your diabetes solely in this way and you may need to be referred to a specialist team for more expert advice and management. Additionally, you can monitor your blood pressure at home and report any consistently abnormal readings to your GP or at your next appointment.

Positive lifestyle factors have been found to noticeably help improve eye health as well as general health. These include:

- regular exercise - research has revealed that moderate exercise can reduce or stop new blood vessel growth in the diabetic eye by up to 45 per cent (Makin et al, 2020)
- reducing or stopping drinking alcohol - you are 16 per cent more likely to develop diabetic retinopathy and 30 per cent more likely to experience a deterioration in existing retinopathy if you consume alcohol (Gupta et al, 2020)
- smoking cessation - smoking can increase the risk of developing diabetes by up to 40 per cent (Hillson, 2019) and is known to decrease retinal blood flow and the delivery of oxygen-rich blood to the retina

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- choosing a healthier diet - there are many studies which assess the impact of minimising the effects of diabetic retinopathy with a wide range of differing dietary approaches. It is advisable to consult a dietitian who can support you with the best diet for both your diabetes and eye health

Treatment of diabetic eye complications

Treatment is likely to be essential in preventing sight loss to your affected eye(s). The type of treatment needed and its intended benefits and potential risks will be discussed with you before you give consent. You will be able to ask any questions at this time. The most common treatments include:

- eye injections - used to treat diabetic macular oedema (build-up of fluid in the macula layers). If you are recommended for this treatment you are likely to need more than one injection. This can improve your vision as well as slow down the damage caused by the leaking blood vessels
- laser treatment - a procedure used only to maintain existing vision and prevent it from getting worse
- steroid implants - a similar procedure to eye injections, used to treat long-term diabetic macular oedema and inflammation

If you develop regular bleeding from the retina into the eye as a result of very advanced retinopathy you may need to have retinal surgery. We will refer you to another service within the Trust which specialises in this type of surgery to see if surgery is needed.

Who can I contact for more information?

- Your GP
- Outpatients at Western Eye Hospital: **020 3312 3236**
- Outpatients at Charing Cross Hospital: **020 3311 1109**
- Royal National Institute for the Blind (RNIB): **0303 123 9999**
- Diabetes UK: **0345 123 2399** or helpline@diabetes.org.uk
- Macular Society: **0300 3030 111** or help@macularsociety.org

How do I make a comment about my visit?

We aim to provide the best possible service and staff will be happy to answer any of the questions you may have. If you have any **suggestions** or **comments** about your visit, please either speak to a member of staff or contact the patient advice and liaison service (**PALS**) on **020 3313 0088** (Charing Cross, Hammersmith and Queen Charlotte's & Chelsea hospitals), or **020 3312 7777** (St Mary's and Western Eye hospitals). You can also email PALS at imperial.pals@nhs.net The PALS team will listen to your concerns, suggestions or queries and is often able to help solve problems on your behalf.

Alternatively, you may wish to complain by contacting our complaints department:

Complaints department, Fourth floor, Salton House, St Mary's Hospital, Praed Street
London W2 1NY

Email: ICHC-tr.Complaints@nhs.net

Telephone: **020 3312 1337 / 1349**

Alternative formats

This leaflet can be provided on request in large print or easy read, as a sound recording, in Braille or in alternative languages. Please email the communications team:
imperial.communications@nhs.net

Wi-fi

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