DIABETIC RETINOPATHY:
WHAT IS IT AND HOW DO I MANAGE IT?

This PIL outlines the causes and mechanisms of diabetic retinopathy, a leading preventable cause of blindness. It emphasises the importance of screening, good glycaemic control and lifestyle changes, and outlines treatment options, including medication, laser treatment and surgery.

Introduction

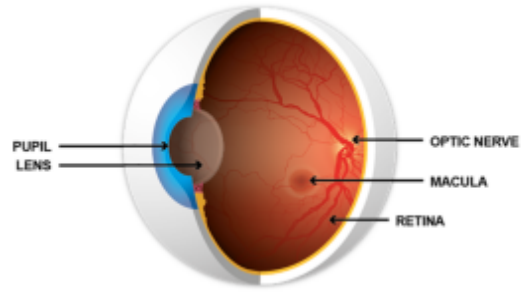
When you have diabetes, particularly when you've had it for a long time, you can develop eye problems affecting your retina.

What is the retina and how does it work?

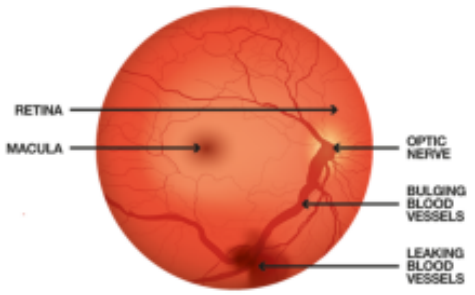
The retina is a light-sensitive layer of tissue at the back of your eye. It changes light into electrical signals, which are sent to your brain via the optic nerve and converted into the images that you see. A network of tiny blood vessels takes your blood to the retina to keep it working.

What is diabetic retinopathy?

The tiny blood vessels that supply the retina with blood can get damaged – especially if your diabetes isn't well controlled. Severe damage to these blood vessels affects how your retina works and can damage your sight. Diabetic retinopathy can cause permanent blindness if not diagnosed and treated promptly.



Cross-section of a healthy eye, showing pupil, lens, optic nerve, macula and retina



A digital photograph of a retina, showing signs of damage from diabetic retinopathy

What are the signs and symptoms of diabetic retinopathy?

You don't usually get symptoms in the early stages of retinopathy, but there may be some changes to your sight if it develops:

- **Seeing floaters** (like wispy clouds, floating in and out of sight)
- **Dimmer vision**
- **Struggling to see when it's dark**

Because there aren't early symptoms, it's very important for everyone over the age of 12 with diabetes to have their eyes screened at least once a year – to pick up changes before their vision is affected.

What is the screening process for diabetic retinopathy?

A healthcare practitioner will examine the back of your eyes (this is painless) and they'll take special photographs of your retina. Depending on what they find, you may be asked to return for another appointment in a year's time, to attend more regular appointments or to discuss treatment options with a specialist.

What are the stages of retinopathy?

A healthcare practitioner will examine the back of your eyes (this is painless) and they'll take special photographs of your retina. Depending on what they find, you may be asked to return for another appointment in a year's time, to attend more regular appointments or to discuss treatment options with a specialist.

Background retinopathy: Common, earliest stage of changes to the retina	Diabetes has started to affect the retina's small blood vessels, which may bulge or leak blood or fluid. Sight isn't affected but there's a greater risk of developing more serious changes that may damage it
Pre-proliferative retinopathy: Changes to the retina become more extensive	Close monitoring needed: increased risk of developing changes that may damage sight
Proliferative retinopathy: Retinopathy progresses further and large areas of the retina are starved of a proper blood supply	Can cause loss of sight but treatment reduces that risk, particularly if given before vision is affected
Maculopathy: Retinopathy occurs at or around the macula (the small central part of the retina used to see things clearly)	Close monitoring needed. Treatment may be offered to reduce the risk of sight loss

Other types of diabetic eye disease

People with diabetes may be more likely to get other types of eye disease too:

- **Cataracts:** A cataract is a cloudy area in the lens of your eye which can make your vision blurry, hazy or less colourful.
- **Open-angle glaucoma:** Glaucoma is when fluid builds up in the eye, damaging the optic nerve which takes the messages from your eye to the brain.

How can I prevent diabetic retinopathy?

Make lifestyle changes now to improve your general health and reduce your risk of developing retinopathy.

- **Take regular exercise:** At least 150 minutes of moderate-intensity activity a week, e.g. walking or cycling
- **Eat a healthy, balanced diet:** Cut down on salt, fat and sugar
- **Stop smoking**
- **Lose weight** if you're overweight
- **Don't regularly drink more than 14 alcohol units a week** (visit Aware.org for information about what a unit of alcohol is)

• **Know your blood glucose, blood pressure and cholesterol levels** – and keep them within range:
- Blood glucose: Your healthcare practitioner may set specific blood glucose targets for you, but they're likely to be 5 to 7 mmol/l when you wake up, before eating, and 4 to 7 mmol/l before meals at other times of the day. A blood test called the HbA1c will show your average glucose level over the past few weeks. Aim for around 48 mmol/l or 6.5%
- Blood cholesterol: You'll probably be advised to aim for a total blood cholesterol level of no more than 4 mmol/l. A blood test can be done to measure it
- Blood pressure: Your healthcare practitioner can measure your blood pressure or you can buy a machine to read your own. When sitting quietly, aim for a resting blood pressure of no more than 140/80 mmHg or less than 130/80 mmHg if you have diabetes complications

• **Attend your eye screening appointments**
• **Your doctor may prescribe blood glucose, blood pressure and cholesterol medication**

How is diabetic retinopathy treated?

In the early stages, your healthcare practitioner will probably just want to examine your eyes more frequently and they'll encourage you to make the lifestyle changes listed above.

In the later stages, you may be offered treatment:
• **Intravitreal injections** (injections into your eye): Injections of medication called anti-VEGF can slow down or reverse diabetic retinopathy. Steroid injections may also be given
• **Laser treatment:** Lasers can shrink the blood vessels and stop them leaking, reducing the swelling in your retina. This can stabilise the eye, but won't usually improve your sight.
• **Eye surgery:** If your retina is bleeding a lot or you have a lot of scars in your eye, a vitrectomy may be recommended. This operation removes some of your vitreous humour, the transparent, jelly-like substance that fills the space behind the lens of your eye. The surgeon can then find and repair the sources of bleeding in your retina and replace any cloudy vitreous, to help improve your vision.

When should I contact my doctor?

Contact your healthcare practitioner immediately if you experience gradually worsening vision, sudden vision loss, shapes floating in your field of vision (floaters), blurred or patchy vision or eye pain or redness.

How can friends and family help?

Someone with retinopathy may need help getting to and from eye appointments and, if the disease progresses, they may need help and support with daily activities. Visit the Diabetes UK and Centers for Disease Control and Prevention websites for advice.

Where can I find out more? | Websites

• Diabetes South Africa website and Facebook page
• Diabetes UK pages on retinopathy and diabetic eye problems
• National Eye Institute (America) pages on diabetic retinopathy

Helplines/support groups:
• Diabetes SA 086 111 3913
• Diabetes SA's list of local support groups