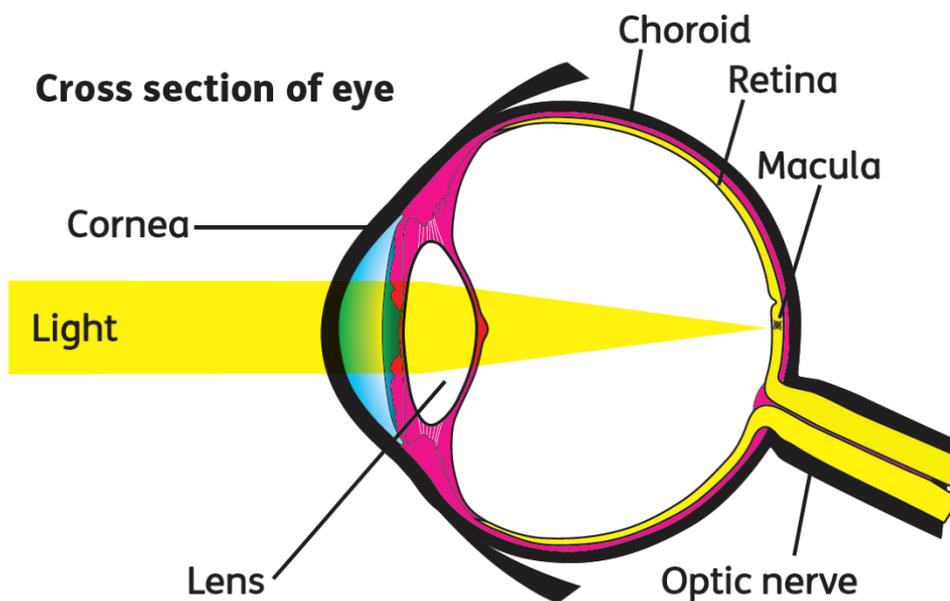


Diabetic Macular Oedema (DMO)

This information explains what DMO is and how it is treated, including the risks and benefits. If you have any queries, please speak to your doctor or nurse.

What is the macula?

The macula is part of the retina at the back of the eye and is responsible for our central vision, colour vision and fine detail.



[1] Macula Society (2021), Cross section of eye

What is Diabetic Macular Oedema (DMO)?

- Patients who have diabetes are at risk of damage to their eyesight. Therefore, diabetic patients must attend their annual diabetic eye screening to reduce their risk of losing sight.
- The eye has a constant blood supply. However, this blood supply can be affected by poor diabetic control, resulting in damage to the blood vessels.

- Damaged blood vessels in the retina (the film in the back of the eye) may become “leaky”. This may result in fluid leaking into the retinal nerve layers, resulting in swelling (oedema).
- Central oedema may result in deterioration or loss of vision.

Who is at risk of DMO?

- Having diabetes for a long time – about one in three people living with diabetes for 20 years or more will develop diabetic macular oedema. [2]
- Poor controlled blood sugars
- High blood pressure
- High cholesterol levels
- Smoking
- Pregnancy

Symptoms:

- Central blurred vision or distortion
- Changes in colours – they may appear dimmer than usual
- Photophobia – Sensitivity to light

How is DMO treated?

Most cases of macular oedema can be monitored and observed and therefore, no treatment is needed.

When treatment is required, it includes the following:

1. Laser to the retina
2. Injection in the eye
 - Anti VEGF injection
 - Steroid injection

Laser photocoagulation

- In this type of laser treatment, light rays are focused onto a tiny spot on the retina.
- The laser works on sealing the leaking blood vessels.
- The aim is to reduce the amount of fluid leaking in the macula and to reduce the risk of vision loss.
- It is done as an outpatient treatment and under local anaesthetic, using numbing eye drops.
- This may be carried out over more than one hospital appointment.
- A follow-up in few months will be needed to assess the full effect of the laser.

DMO: The drugs used and the patient pathway

Treatment will vary depending on your individual condition and will differ between patients. These are a list of the drugs used in the Ophthalmology Diabetic Service in the Royal Berkshire Hospital.

A: Anti-Vascular Endothelial Growth Factor (anti-VEGF)

Including:

- Eylea
- Lucentis

These drugs are injected as a course of many months. Your doctor will explain to you the regime and duration of treatment. Initially, you will get a course of monthly injections and the doctor will re-assess and evaluate your response to treatment. The doctor will continue with treatment if necessary and if it is in your best interest.

B: Steroids

Including:

- Ozurdex
- Iluvien

These are slow release injections lasting 3-6 months with Ozurdex® and up to 36 months with Iluvein®. Either of these injections may be recommended if Lucentis or Eylea is not be suitable, due to health risks or if they do not show sufficient success despite multiple injection treatment. Steroid injections can be repeated if the initial response is clinically satisfactory. When indicated, your doctor will chose the appropriate drug.

Who will do the injection?

It will be performed by either an ophthalmologist (specialist eye doctor) or a trained registered allied health professional, such as a nurse, orthoptist or optometrist.

The day of the injection – helpful tips

- No makeup to be worn, especially around the eyes.
- Continue to take any regular medication, including eye drops.
- Report any heart attack, mini stroke or stroke in the last three months.
- If you had any recent eye infection, then it is important to mention this to the clinician.

The day of the injection – before the injection

- A clinician will talk to you about the procedure and ask you to sign a consent form.
- You will be taken through a patient safety identity checks.

- The site of injection will be marked on your forehead or you will be given a sticker with your details on and the eye and medication required will be marked clearly on this.

The day of the injection – in the Injection Room

- The clinician giving the injection and a nurse or health care assistant will go through some further initial checks with you.
- You will be asked to lie flat on a bed (let us know if you are unable to lie flat, so we can make different arrangements).
- You will be given two initial drops, one to numb the eye (antiseptic) and the other to reduce the chance of infection (Iodine).
- The skin around the eye will be cleaned with Iodine.
- A clear plastic device (called ‘The Invitrea’) is inserted. This sits on the top of the eye and keeps the eyelids out of the way.
- You may feel a small pressure as the injection is inserted; this may vary between patients and injections.
- The Invitrea is removed and the Iodine washed out with saline solution.
- The skin around the eye is then cleaned to remove any Iodine.
- You will be asked to count fingers. This is important to ensure there hasn’t been a rapid increase in pressure in the eye.
- The nurse or health care assistant in the Injection Room will ask you if you would like your hand held, if this will help to reduce any stress or anxiety.

Advice following the injection

- The white part of your eye is likely to be red. This is normal and should settle in a week or two.
- The injected eye may be tender for a day or two but should not get more painful. Any pain or discomfort can be relieved by taking any mild painkillers such as Paracetamol or Ibuprofen.
- Your eye will feel gritty and watery – we will give you some comfort drops (lubricants) to take home.
- You may see some floaters / blobs / spots in your vision immediately after your injection or later. It is usually 24 hours for the larger blobs to disappear and a few days for the specks to diminish.
- Driving and normal daily activities can be resumed next day. Please ask your doctor for advice.

Advice following the injection – things to avoid

- Rubbing or touching the treated eye
- Swimming for a week
- Mascara / eye makeup for a week

Advice following the injection – signs of an infection

Occasionally, the following symptoms may be the early start of an infection:

- Your eye sight deteriorates or becomes more misty.
- The injected eye becomes increasingly red all over, painful or you develop a deep ache starting in the socket.
- Floaters, increasing in number and density.

If any of these symptoms occur, **go straight to the nearest Eye Casualty or Emergency Department (A&E).**

What are the risks of DMO treatment?

Common, up to 1 in 20, usually temporary:

- Red or sore eye
- Corneal abrasion
- Floaters
- Headache

Uncommon, up to 1 in 100:

- Inflammation inside the eye
- High pressure needing temporary treatment

Rare, up to 1 in 1000:

- Infection inside eye (1:2000 per injection)
- Bleeding inside the eye
- Glaucoma

Very rare, up to 1 in 10,000:

- Retinal damage (detachment, tear)
- Cataract
- Need for further operation or procedure
- Permanent serious loss of vision

Uncertain risk:

- Stroke / heart attack

Who is not suitable for an injection?

You should not be given anti-VEGF injections if any of the following apply to you:

- You have an infection in either eye
- You are allergic to anti-VEGF or any of its ingredients
- You have had a stroke or heart attack within the last 3 months
- You have uncontrolled high blood pressure or angina
- You are pregnant
- You are breastfeeding

LVA clinics and ECLO support

Our Sight Loss Advisors, Sarah and Sonya, are on hand to assist anyone with sight loss, or their relatives and carers, to access the support they may need with their Low Vision.

If you would like to speak to Sarah or Sonya, please ask a member of staff and they will organise this.

Contact numbers

For any appointment or non-urgent queries please call:

0118 322 7169 – Select option 2 and then select Option 2 again.

If you have any urgent symptoms then please attend your nearest eye casualty:

- Eye Casualty (Reading): Mon-Fri 9am to 5pm; Sat & Sun & bank holidays 9am-12.30pm; Closed Christmas Day and New Year's Day.
- Eye Casualty (Windsor): Mon-Fri 9am to 5pm; Sat 9am-12.30pm; Closed Sun & bank holidays.

Patient responsibility

- You will be required to be on long-term management once you start treatment with injections.
- Appointments will either be made on the day or sent out to you.
- If an appointment is not received, it is your responsibility to chase the appointment by ringing the department on the number above. Or if you wish to cancel or reschedule an appointment, you must also notify the department.

References

[1] Macula Society (2021), Cross Section of eye

(<https://www.macularsociety.org/macular-disease/eyecrosssection.>)

[2] Macula Society (2021) Diabetic Macula Oedema: Risk Factors.

([https://www.macularsociety.org/macular-disease/macular-conditions/diabetic-macular-oedema/.](https://www.macularsociety.org/macular-disease/macular-conditions/diabetic-macular-oedema/))

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

Mr Molham Entabi MD, Consultant Ophthalmic Surgeon, RBFT Ophthalmology,
August 2022

Next review due: August 2024