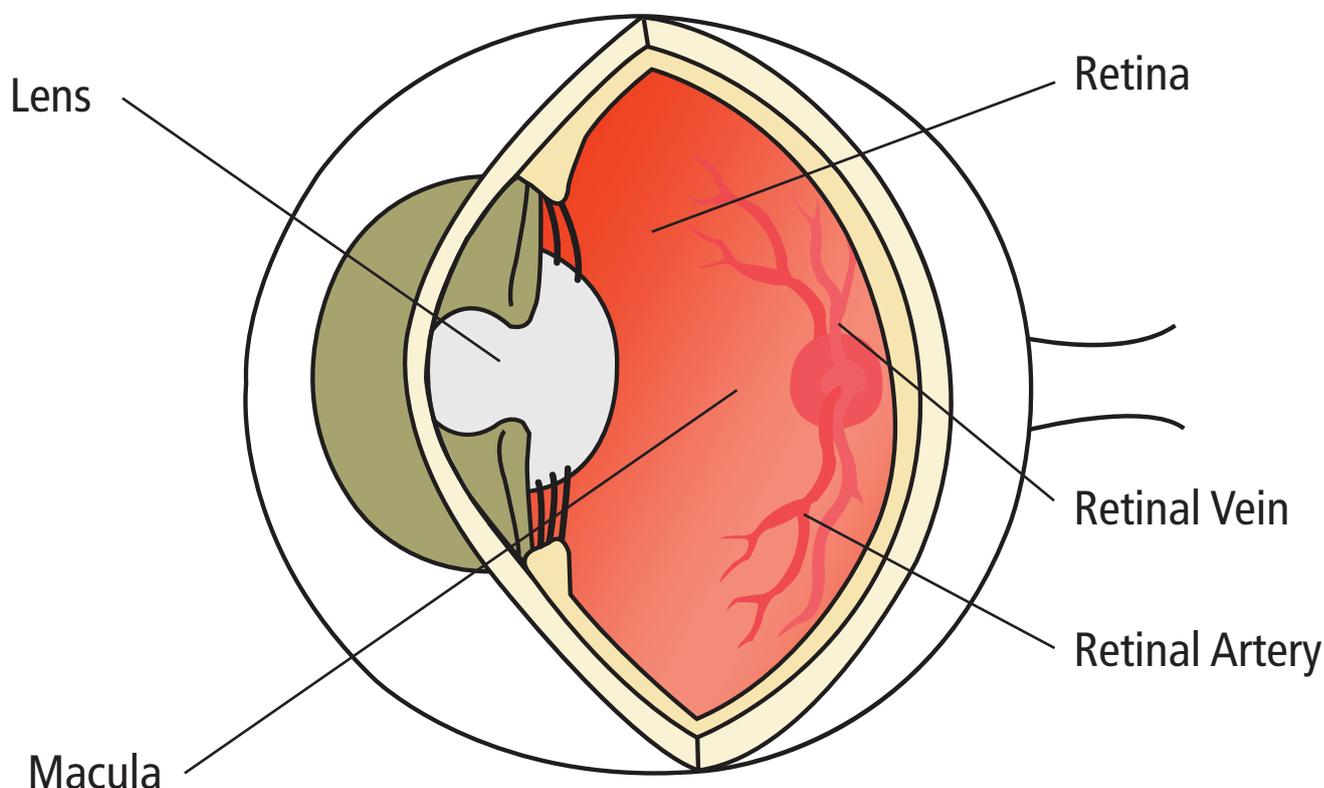


Diabetic macular oedema (DMO)



What is the macula?

The tissue at the back of the eye is called the retina and can be thought of as being like the film in a camera. The central part of the retina is called the macula. The macula provides detailed sharp central vision and the ability to appreciate colour.



What is diabetic macular oedema (DMO)?

Diabetes damages capillaries (tiny blood vessels) in your retina. This damage can either lead to leakage of fluid from your bloodstream into your retinal nerve layer or blockage of the blood supply, starving your retina of oxygen. The leakage causes oedema (waterlogging). When this affects the macula – the centre of your retina – it is known as diabetic macular oedema (DMO).

Who is at risk of DMO?

Anyone who suffers from Type 1 or Type 2 diabetes can develop DMO. The risk is increased if you:

- have had diabetes for a long time – about 1 in 3 people living with diabetes for 20 years or more will develop diabetic macular oedema

- have poorly controlled blood sugars (High HbA1C)
- have high blood pressure
- have high cholesterol levels
- are a smoker
- are pregnant.

What are the symptoms?

Waterlogging (oedema) of the macula does not allow the image to form properly on your retina. This causes blurred vision. A healthy macula is essential for good vision. Reading, writing, or any other close work such as knitting are affected the most.

How is it diagnosed?

DMO may be detected during an annual eye screening visit or during an outpatient clinic appointment.

Sometimes scans or photographs taken of your retina may show early signs of DMO but at this stage there may not be any symptoms of blurred vision. If significant DMO is found, you will be referred to a specialist clinic.

What happens at the specialist clinic?

You will have several tests to determine the extent of your DMO:

- visual acuity test – to see how well you can see
- Optical Coherence Tomography (OCT) scan – an optical scan which uses a light beam to build up a detailed picture of the macula
- examination of the retina – drops are instilled to dilate your pupils, so the specialist can look at the back of your eye to assess the macula and the rest of the retina.

Are any other tests required?

You may need an additional test called Fundus Fluorescein Angiography. In this test a fluorescent dye is injected into your arm through a cannula (small plastic tube) and photographs are taken of the dye as it passes through the blood vessels at the back of your eye.

This test is done on a different day rather than on the day of your outpatient appointment.

How is DMO treated?

The treatment for DMO depends on how severe the oedema is. This is determined with an OCT retinal scan to measure the thickness of the retina.

- **Observation** – in some patients, DMO can resolve spontaneously. In these cases this can be just monitored regularly in the clinic.
- **Laser treatment to the macula** – this involves applying laser burns in the macular region. Several applications are given in a session and more than one session may be needed. Laser treatment is not beneficial in all cases.
- **Injection of anti-vascular endothelial growth factor (anti-VEGF) drugs in the eye** – there are two anti-VEGF drugs (Lucentis and Eylea) which work on leaky blood vessels to help reduce fluid in the macula. Injections are given in an outpatient setting under local anaesthesia. One injection is given every month to begin with. After that further injections are given on a regular basis.
- **Injection of steroid implant in the eye** – a very small dissolvable steroid implant (called Ozurdex) is injected in the eye under local anaesthesia. The effect of treatment lasts 3-4 months and it can be repeated thereafter. Another type of steroid implant (called Iluvien) lasts for up to three years following injection.

Which treatment is most effective?

Research trials have shown the most effective treatment for improving sight is anti-VEGF injections, followed by the steroid implant and then laser treatment. However NICE recommends treatment with anti-VEGF or steroid only when the retinal thickness is more than 400 microns on the OCT retinal scan.

A combination of treatments may be more effective and your doctor will discuss this with you if appropriate.

How is the anti-VEGF treatment given?

This is performed as an outpatient procedure and takes only a few minutes.

The nurse puts local anaesthetic and antiseptic drops into your eye before the procedure and then your eye is cleaned with an antiseptic solution.

The injection is given from the side so that you cannot see it being done. It is not a painful procedure but most people describe it as feeling mild pressure on the eyeball.

Are there any risks or complications?

As with all procedures, there are some possible risks, but the benefits usually outweigh the risks:

- **injection** – there is a small risk (0.3%) of infection in the eye (endophthalmitis)
- **steroid implants** – the main risks are glaucoma (increased pressure in the eye) and cataract (cloudy lens) in around 25% cases
- **anti-VEGF injections** – there is a small risk (1-2%) of cardiovascular events such as heart attack and stroke.

How long will I need treatment?

If the treatment is successful initially, it can be carried on for as long as the benefits outweigh the risks. If your DMO completely resolves, the treatment can be discontinued temporarily.

Does the treatment work for everyone?

Sometimes despite successfully treating the swelling at the back of your eye, the vision fails to improve. This is a result of lack of oxygen caused by blocked blood vessels. Sometimes the treatment does not improve the macular swelling and sometimes the vision gets worse because of a worsening of the complications from the treatment as described above.

Any questions?

This leaflet provides just an overview of diabetic macular oedema. If you have any specific questions or queries please don't hesitate to speak to us during your clinic visit. You can also contact us on the numbers overleaf.

If you are undergoing treatment with eye injections and you experience severe eye pain or a sudden decrease in your eyesight please contact the Eye Unit Nurse on 01872 252324.

For any other queries regarding your appointment please contact the Macular Service co-ordinator on 01872 253402.

If you would like this leaflet in braille, audio version or in another language, please contact the General Office on 01872 252690

