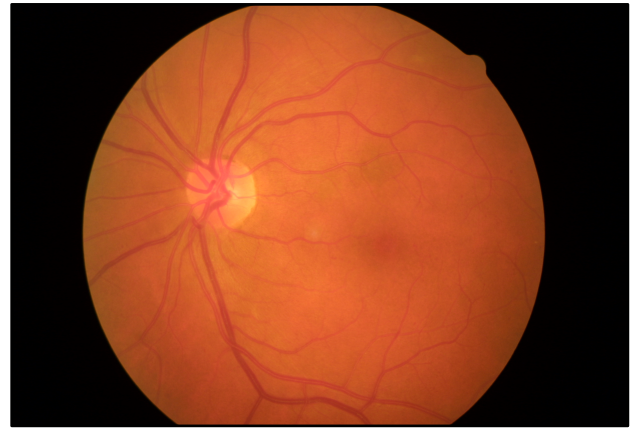
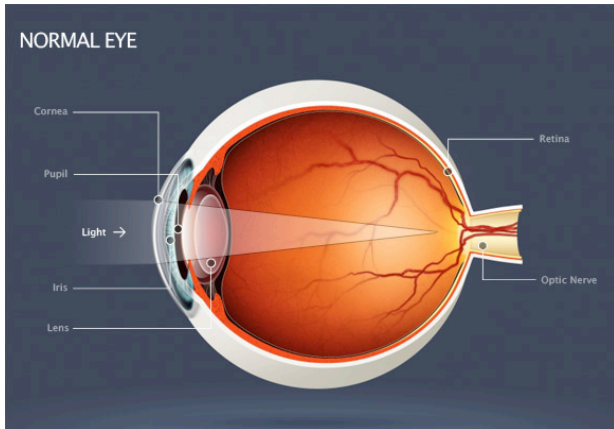


Diabetes and the Eye

Diabetes is a disease that affects the metabolism of glucose in the body and causes wide ranging damage to its cells. In the eye this can cause a number of problems including early cataract and dry eyes. The most serious vision threatening problem however, is due to its damage to blood vessels which supply the retina.

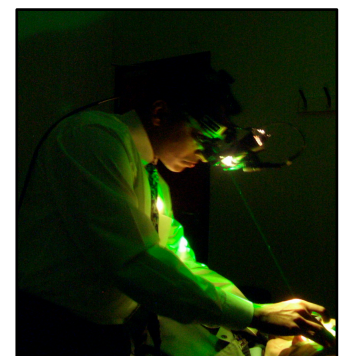


The retina is the thin inner lining of the eye which traps light and transmits the sensation of vision to the brain. It is one of the most metabolically active tissues of the body and is highly dependent on its blood supply for nourishment and oxygen.

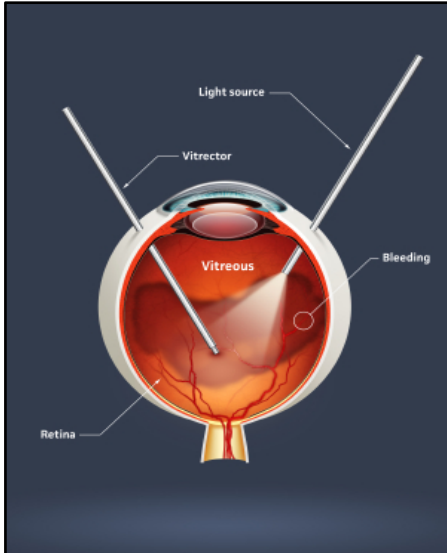
Damage to its blood vessels causes fluid to leak out into the surrounding retinal tissue and distort its structure. This fluid collection in the most sensitive region of the retina is called **diabetic macula oedema (DMO)** and manifests as progressive blurring of the central vision. The other consequence of leaking fluid and narrowing of the blood vessels is that not enough blood reaches the target tissues, leading to retinal cell damage and death. The retina responds to this insult by producing agents (VEGF being the most important) that encourage the formation of new blood vessels (**proliferative diabetic retinopathy**). These vessels however are abnormal and fragile and form in undesirable places within the eye, resulting in frequent bleeds within the cavity of the eye (**vitreous haemorrhage**), excessive traction on the retina causing it to detach (**retinal detachment**) and blockage of the drainage channels of the eye causing the pressure within it to rise (**neovascular glaucoma**). All of these are potentially blinding conditions.

The prevalence of diabetes is increasing and diabetic retinopathy is the leading cause of blindness in the UK within the working population. As diabetic retinopathy is a progressively evolving condition, it is important to screen for it so that treatment can be started at an early stage to prevent the more serious complications of the disease.

Treatment is primarily in the form of **LASER treatment**. Macular oedema is treated by applying LASER to the leaking blood vessels. Proliferative retinopathy is treated by applying LASER in large quantities to the peripheral retina with the aim of reducing the secretion of VEGF and directing blood supply to the more critical areas of the retina.



More recently **anti VEGf drugs**, which are injected near the retina have been very effective in countering the effects of diabetic retinopathy giving us better options in certain situations.



In more advanced stages of the disease, **surgery** is necessary to counter the damage and salvage vision. Vitreoretinal surgery is very effective in achieving these goals and is now mostly performed under local anaesthesia with the patient returning home on the day of surgery.



The key to retarding the progress of diabetic retinopathy is tight control of blood sugars and blood pressure. Early detection, regular monitoring and timely intervention gives us the best chance of preventing the blinding effects of this condition.

Zachariah Koshy MBBS, FRCS, MRCO, DNB