



# Diabetes: ophthalmic manifestations

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Diabetes affects the eyes and diabetic retinopathy is the leading cause of blindness in our community. However, diabetes can affect the eyes in many different ways, as briefly outlined here.

## Ocular surface

Ocular infections such as conjunctivitis and blepharitis are more common in diabetics. Symptoms are often exacerbated by dry eye, which occurs more frequently due to poor tear-production, reduced numbers of conjunctival goblet cells and reduced corneal sensitivity (probably related to diabetic neuropathy).

Frequent lubricating eyedrops and eyelid cleaning may reduce symptoms. Antibiotics are usually not indicated. Patients should be counselled about meticulous contact lens handling to prevent infections.

## Lens

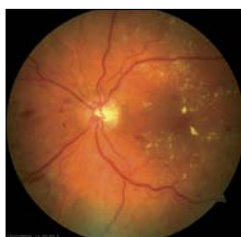
Blood glucose fluctuations can influence the refractive index of the lens, resulting in refractive errors that usually normalise after control of the blood sugars.

Cataracts are more common in diabetic patients and those with more severe retinopathy or maculopathy tend to have a worse outcome from surgery as there is an increased risk of worsening retinal disease if this is not adequately controlled pre-operatively.

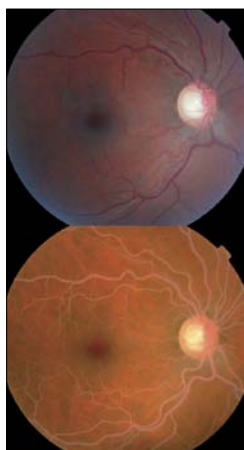
## Retina

Diabetic retinopathy and maculopathy are most common. Macular disease tends to cause central vision loss. Pathophysiologically, there are many changes within the retinal vessels that result in ischaemia or oedema of the retina.

Clinical signs of retinopathy include haemorrhages, cotton wool spots, beading of veins and other microvascular anomalies. The formation of abnormal blood vessels on



■ Fig 1. Diabetic retinopathy and maculopathy.



■ Fig 2. Lipaemia retinalis - before a fatty meal (top) and 30 mins after (bottom).

the optic disc (NVD) or peripheral retina (NVE) heralds the onset of 'proliferative' diabetic retinopathy. This is a severe complication and requires urgent laser treatment to prevent vision loss.

Maculopathy is the commonest cause of vision loss in diabetics – the central retina becomes oedematous or ischaemic. Signs of maculopathy include hard exudates and retinal thickening. Until recently, the only effective treatment for macular oedema was retinal laser. Now, intravitreal injections improve vision.

Risk factors for retinal disease include poor long-term control of sugar levels and disease duration, as well as smoking, systemic hypertension and obesity. Type 1 diabetics usually have more severe disease.

*Lipaemia retinalis* is a rare 'curiosity' sometimes found in diabetics, where abnormal lipid control results in transient severe hypertriglyceridaemia following a fatty meal. Retinal vessels appear creamy pink. It is visually insignificant (fig 2).

## Optic nerve and other cranial nerves

Primary open angle glaucoma is more common in diabetics.

Diabetic papillopathy is a benign swelling of the optic nerve head. There are no signs of optic neuropathy and no intracranial pathology. It resolves over time with improved blood sugar control.

Other cranial neuropathies are common. Typically, diabetic 3rd nerve palsies are pupil sparing. Most spontaneously resolve after three months.

This clinical update is supported by the Eye Surgery Foundation ■



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