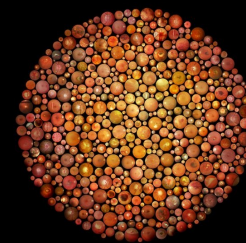


Retinal Vein Occlusion

Patient Information Leaflet

MEDICAL RETINA



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KEY POINTS

- A retinal vein occlusion is a blockage of one of the veins draining blood from the retina, causing sudden painless loss of vision.
- There are two types: branch (BRVO) and central (CRVO) - CRVO tends to cause more severe visual loss.
- Identifying and treating underlying risk factors - particularly blood pressure - is essential to protect the other eye.
- Fluid at the centre of the retina (macular oedema) is the main treatable cause of vision loss and usually responds well to injections.
- Regular follow-up is important, especially in the first six months.

What Is a Retinal Vein Occlusion?

The retina - the light-sensitive lining at the back of your eye - depends on a network of arteries and veins to maintain its blood supply. When one of the veins becomes blocked, usually by a clot, blood and fluid can no longer drain normally. This causes them to leak into the retinal tissue, producing bruising, swelling, and areas of oxygen deprivation. The result is a sudden, painless reduction in vision.

There are two main types, which differ in severity depending on which vein is affected:

- **Branch retinal vein occlusion (BRVO)** - a blockage of one of the four smaller veins, each of which drains roughly a quarter of the retina. Vision loss is often partial, affecting one area of the visual field.
- **Central retinal vein occlusion (CRVO)** - a blockage of the main retinal vein where all four branches converge. This tends to cause more widespread and severe visual loss.

What Causes It?

The precise mechanism of clot formation is not fully understood, but a number of common conditions make retinal vein occlusion significantly more likely. Identifying and addressing these is one of the most important steps in your care - both to help the affected eye and to protect the other one.

- **High blood pressure** - the most important risk factor. Even modestly elevated blood pressure substantially increases the risk. If yours is raised, treatment from your GP is strongly advised.
- **High cholesterol** - treatable with tablets and highly effective at reducing risk.
- **Glaucoma** - raised pressure inside the eye increases the risk of vein occlusion. If glaucoma is identified, pressure-lowering drops are usually very effective.
- **Diabetes** - retinal vein occlusions are more common in people with diabetes. Good diabetic control protects vision and reduces the risk of further occlusions.
- **Smoking** - each additional cigarette increases the risk. Stopping smoking is one of the most effective steps you can take. Your GP can provide support, and resources are available at [nhs.uk/smokefree](https://www.nhs.uk/smokefree).
- **Rare blood disorders** - certain clotting abnormalities can predispose to vein occlusion. These are identified with simple blood tests and, where treatment is needed, will be managed by a haematologist.

In a small number of cases no underlying cause can be found. Even so, monitoring blood pressure and general cardiovascular health remains important.

How Does a Vein Occlusion Affect Vision?

Vision loss in retinal vein occlusion arises from two distinct processes, which have very different implications for treatment:

- **Direct retinal damage** from the interruption to blood flow. This causes permanent structural changes to the retina and cannot be reversed by any current treatment.
- **Macular oedema** - swelling caused by fluid leaking from damaged blood vessels into the central retina (the macula). This is the main cause of reduced central vision and is potentially reversible with treatment.

In CRVO, approximately one in three patients experiences progressive visual deterioration over the first three years without treatment.

Treating Macular Oedema

When fluid accumulates at the macula, I will usually recommend injection treatment to reduce leakage and improve vision. Two main options are available:

Anti-VEGF Injections

A small injection into the eye given monthly until maximum vision is achieved, then at extended intervals as long as the condition remains active. Treatment is typically needed for up to four years. Around 50% of patients gain a significant improvement in vision. Anti-VEGF injections carry a small increased risk of cardiovascular events, which I will discuss with you.

Steroid Implant

A slow-release steroid pellet injected into the eye, effective for four to six months and repeatable as needed over a similar overall treatment period. Around 50% of patients gain significant vision improvement. Side effects include an increased risk of cataract formation and raised eye pressure, which will be monitored at follow-up appointments.

Both treatments carry the same small risk of serious infection inside the eye (approximately 1 in 1,500 injections). All injection procedures are performed under sterile conditions with local anaesthetic drops.

The choice between anti-VEGF and steroid treatment depends on your individual circumstances - including other medical conditions, your other eye, and practical factors such as how frequently you can attend for injections. I will discuss the options in detail at your appointment.

In BRVO, there is a reasonable chance of the fluid clearing spontaneously without any intervention. A period of observation is sometimes appropriate, though evidence shows that early treatment achieves the best visual outcomes. We will weigh this up together based on how your vision has been affected.

Treating Abnormal New Blood Vessel Growth

In approximately 20% of patients with retinal vein occlusion, the oxygen deprivation caused by the blockage triggers the growth of abnormal new blood vessels on the retinal surface or the iris. These vessels are fragile, prone to bleeding, and can cause a dangerous rise in eye pressure - leading to further vision loss and, in severe cases, pain.

This complication is best managed with panretinal photocoagulation (PRP) laser - a treatment that reduces the stimulus for abnormal vessel growth and helps stabilise the eye. It is important to understand that PRP laser is designed to preserve and protect the eye rather than to improve vision. It is most effective when performed before bleeding occurs, which is one of the reasons why close monitoring in the months following a central vein occlusion is so important.

Investigations

I will usually arrange the following tests as part of your assessment and ongoing monitoring:

- **OCT scan (optical coherence tomography)** - a quick, painless scan that measures the amount of fluid at the macula in precise detail. This is used both to guide treatment decisions and to track your response over time.
- **Fluorescein angiography (FFA)** - a yellow dye is injected into a vein in your arm and a series of photographs taken as it passes through the retinal blood vessels. This gives detailed information about the extent of the occlusion, areas of ischaemia, and any abnormal vessel growth.

Blood tests to screen for the risk factors outlined above - including blood pressure, cholesterol, blood glucose, and clotting - are typically arranged via your GP or, where appropriate, directly.

Follow-up

If injection treatment is started, appointments will typically be every four to eight weeks during the first year, with reducing frequency thereafter as the condition stabilises. Patients with CRVO are normally monitored closely for the first six months given the higher risk of neovascular complications. I will advise you on the follow-up schedule most appropriate to your situation.

SEEK URGENT ADVICE IF YOU NOTICE:

A sudden further worsening of vision, new eye pain, or the eye becoming red after treatment. Please call my secretary on **01273 782500** in the first instance. If you cannot reach us, attend the eye casualty department at Sussex Eye Hospital (Eastern Road, Brighton, BN2 5BF) or your nearest emergency eye service.