

# RETINAL VEIN OCCLUSION

## What is the retina?

This is a layer of light sensitive cells that line the back layer of the eye. Within the retina are blood vessels made up of arteries (bring blood to supply nutrients) and veins (carry waste products away).

## What is a Retinal Vein Occlusion?

This is when the flow of blood stops or slows down due to the formation of a blood clot in the retinal vein.

This may occur due to:

1. Pressure on the vein from a hardened adjacent retinal artery (which can occur with high blood pressure, smoking, high cholesterol, diabetes, age).
2. High pressure in the eye.
3. Conditions that can make the blood sticky or thick.
4. Inflammation in the eye.

When the blood flow stops, this causes a high pressure within the vein forcing blood and protein to leak out of the vein and into the retina. This can cause a variable degree of swelling in the retina and lack of oxygen resulting in visual loss. The degree of visual loss depends on the size and site of the blocked vein. Sometimes it is the main (central) vein that is affected, sometimes only one of its branches.

## Prevention

If a central retinal vein occlusion (CRVO) has occurred in one eye then the risk of a CRVO occurring in the other eye is 5% per year. In order to reduce this risk, it is important to address all factors that may have contributed to the initial event. Therefore your blood pressure will be checked and a blood test will be performed to check your cholesterol, sugar, inflammatory markers, etc.

## Treatment

### 1. Fluid in the retina (macular oedema)

Persistent swelling at the centre of the retina (the macula) due to leakage of fluid out of damaged blood vessels is the main cause of loss of central vision.

Treatments available to reduce the swelling are anti-vascular endothelial growth factor (anti-VEGF) agents or steroids such as Ozurdex intravitreal implant. These medicines are given by injection into the eye and the injections often need to be repeated as the effect of the medicine wears off.

Injection treatment aims to stabilise or improve vision.

Laser treatment may also be used, alone or in combination, to help stabilise or improve central vision in branch retinal vein occlusions.

The above options for treatment of macular swelling have advantages and disadvantages and will be tailored to the patient and the clinical picture. More information on each treatment is available on discussion.

### 2. Abnormal new blood vessel growth (neovascularisation)

Patients with retinal vein occlusions may develop abnormal blood vessels on either the iris at the front of the eye or on the retinal surface. These abnormal blood vessels can bleed or cause a marked pressure rise in the eye, leading to further loss of vision.

This can normally be prevented by laser treatment to the retina and the use of an anti-VEGF agent for vessels growing on the iris.

## Follow-up

- Patients with **central retinal vein occlusions (CRVO)** are reviewed for a minimum of 2 years.
- Patients with **branch retinal vein occlusions (BRVO)** are normally reviewed for a minimum of 18 months.
- If injection treatment is given, appointments for injections or monitoring occur every four to eight weeks for the first year and then less frequently in the second year.