

Branch Retinal Vein Occlusions (BRVO)

The retina is the delicate light-sensing tissue in the back of the eye. It functions in a similar fashion to film in the back of a camera. It is very dependent on its rich blood supply to meet its high rate of metabolism. The retina removes nutrients from the blood stream more efficiently than any other tissue in the body. The blood vessels are evaluated using special instruments through dilated pupils. Many specific diseases and conditions can be diagnosed when changes in these blood vessels are identified. Retinal drawings, photographs and studies may be necessary.

A common disease to affect the fine retinal vessels is the obstruction of a branched retinal vein. Arteries and veins course through the retina and at certain points, cross each other. At these crossing points, the artery and vein share a common sheath. A thickened artery may compress the wall of the vein enough to block blood flow thus causing a “**branch retinal vein occlusion**” (**BRVO**). A **BRVO** causes hemorrhages, swelling and decreased retinal function. These changes may result in blurred or distorted vision in the affected eye.

75% of patients with a **BRVO** have high blood pressure. Other diseases that cause **BRVO** are diabetes, glaucoma, atherosclerosis and certain blood disorders. Roughly, only 25% of patients with a **BRVO** experience near complete resolution. The remaining 75% have persistent blockage of the vein, retinal hemorrhages and vision problems. Each case is different and individual.

A BRVO can cause the following problems:

- 1) Macular edema, due to persistent swelling of the macula from the leaking blood vessels.
- 2) Overall decreased retinal function in the area of the hemorrhage.
- 3) Neovascularization which is growth of abnormal blood vessel networks on the retina. These new vessels are fragile and non-functional. They tend to leak fluid and blood thereby causing blurred vision.

When a BRVO is diagnosed, the homocysteine blood levels in a patient are checked. Since many cases resolve on their own, simple observation is appropriate at first. A **Fluorescein Angiogram** is performed to evaluate the retinal circulation. **Retinal Photographs** are taken to document the condition. Laser treatment to the area of the BRVO may be necessary to close the leaking blood vessels or destroy new blood vessel growth. A recent advance in treatment options consists of injecting an ocular injection (anti-VEGF) on a monthly basis for 6 months. Also, a patient may be placed on Folic acid and Vitamin B supplements to lower the homocysteine level.

In conclusion, a BRVO is a blockage of a retinal vein. Vision may be affected. Prompt evaluation by an ophthalmologist is recommended to ensure the best possible outcome.