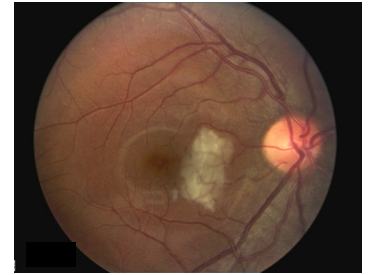


# Retinal artery occlusion

The retina is fed by a system of blood vessels (arteries and veins) like a tree, with the trunk in the optic nerve and branches extending to the farthest edges of the retina. A central retinal artery occlusion (CRAO) is blockage of blood flow to the retina in the main trunk with sudden, severe vision loss throughout the visual field of one eye. A branch retinal artery occlusion (BRAO) is blockage along a branch of the tree. This results in poor blood flow to a section of the retina. A patient experiences branch retinal artery occlusion as sudden, painless loss of a portion of vision. If the artery occlusion is away from the center of the retina, central vision may be unaffected. If the artery occlusion affects the central retina, reading vision may be severely limited. The blockage or occlusion may last only a few seconds, or it may be permanent.



▲ Photograph of a branch retinal artery occlusion.

## What causes retinal artery occlusion?



▲ Photograph of a central retinal artery occlusion. The retinal whitening is due to poor blood flow.

The common associations with retinal arterial occlusion are atherosclerosis, systemic hypertension, and diabetes. An embolus or "floating log jam" such as cholesterol or a detached blood clot may come from the heart or carotid arteries and block a retinal artery. Carotid artery disease occurs in 45% of patients with CRAO. If presenting before age 30, retinal artery occlusion is more often associated with migraine, trauma, or coagulation disorders (blood disorders that cause easy clotting). In elderly patients, a disease called giant cell arteritis can cause inflammation of the central retinal artery, resulting in occlusion.

## Evaluation of retinal artery occlusion

Your retinal surgeon may order diagnostic tests in the office to determine the degree of damage caused by the artery occlusion. Blood flow in the affected area may be permanently

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reduced. In some cases, the eye may grow abnormal blood vessels. These complications of BRAO or CRAO can be detected by a combination of clinical examination and imaging tests. Fluorescein angiography (FA) evaluates blood flow in the retina with a series of photographs taken after intravenous injection of a synthetic dye (fluorescein) which contains no iodine. Carotid studies, magnetic resonance angiogram, echocardiogram, and blood tests may be ordered to look for medical problems which may be life-threatening if untreated.



▲ Fluorescein angiogram showing poor retinal blood flow in a central retinal artery occlusion.

## Treatment of retinal artery occlusion

While it is important to identify and treat the underlying cause of a retinal arterial occlusion, there are no well-established medical or surgical techniques for treating the actual occlusion.

Massage of the eye may be attempted to increase blood flow, decrease eye pressure, and dislodge emboli. Fluid may be taken from the front of the eye to lower eye pressure quickly. Sublingual nitroglycerin (nitroglycerin tablet placed under the tongue) has been tried with variable success.

If new vessels grow in the front of the eye, they may cause glaucoma, sometimes with pain and loss of vision. These abnormal new blood vessels can be treated with laser and injections of medicine into the eye, but these treatments do not restore vision.

In all cases, treatment of underlying medical conditions (such as diabetes or high blood pressure) is critical to prevent stroke or blood vessel blockage elsewhere in the body.

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Bay Area Retina Associates is a group practice of retinal surgeons. All members of the group are board certified by the American Academy of Ophthalmology and have completed fellowship training in vitreoretinal surgery. BARA surgeons have expertise in the treatment of retinal detachment, diabetic retinopathy, age-related macular degeneration, macular hole, epiretinal membrane, and retinal vascular disease. BARA physicians see patients in seven offices and perform surgery at several hospitals and surgery centers around the East Bay.