

Diagnostic Tests

If you experience any symptoms of eye stroke, it is important that you seek urgent medical attention as soon as possible. Testing may include:

- Referral to medical history for one's health condition and risk factors
- Complete eye examination, including dilated fundus examination, eye pressure measurement, etc.
- Blood pressure measurement
- Fundus photography
- Visual field test
- Optical Coherence Tomography (OCT)
- Fundus Fluorescein Angiography (FFA)
- Blood tests
- Medical check-up to assess the risk of cerebrovascular and cardiovascular diseases (e.g. MRI scan, carotid artery evaluation by Doppler ultrasound, electrocardiography, echocardiography, etc.)

Treatment

Our ophthalmologist will discuss with you your condition and advise on which treatment is most appropriate for you. Depending on your diagnosis, treatment may include:

- Eyeball massage (CRAO)
- Lowering the eye pressure (CRAO)
- Retinal endovascular cannulation surgery to displace or lyse the embolus or thrombus (CRAO)
- Intravitreal injection of anti-vascular endothelial growth factor (anti-VEGF) agent or steroids to treat macula edema (CRVO)
- Retinal laser therapy (Pan Retinal Photocoagulation) and intravitreal injection of anti-VEGF agent to treat abnormal growth of new blood vessels (CRVO)
- Modification of risk factors
- Referral to neurology or cardiology for further work-up and treatment for underlying cerebrovascular and cardiovascular conditions

HKSH Ophthalmology Centre

Happy Valley

Hong Kong Sanatorium & Hospital
4/F, Li Shu Fan Block
2 Village Road, Happy Valley, Hong Kong
Tel: (852) 2835 8880; (852) 2835 8890
Fax: (852) 2892 7510
eye@hksh-hospital.com
www.hksh-hospital.com

Service Hours

Monday to Friday: 9:00 am – 5:00 pm
Saturday: 9:00 am – 1:00 pm
Closed on Sundays and Public Holidays
Consultation by Appointment

Admiralty

HKSH Healthcare Medical Centre
Level 21, One Pacific Place
88 Queensway, Hong Kong
Tel: (852) 2855 6700
Fax: (852) 2523 7660
eye@hksh-healthcare.com
www.hksh-healthcare.com

Service Hours

Monday to Friday: 9:00 am – 5:00 pm
Saturday: 9:00 am – 1:00 pm
Closed on Sundays and Public Holidays
Consultation by Appointment

For enquiries and appointments,
please contact us



Eye Stroke



Stroke often occurs in the brain, but it is also possible to occur in the eyes, affecting the retina or optic nerve. Eye stroke can lead to sudden and painless loss of vision because of the compromised blood supply to the optic nerve or retina.

The optic nerve connects the eye to the brain and carries millions of nerve fibers and blood vessels. Retina is the inner neurosensory cells layer which also contains a network of blood vessels. It detects and sends visual signals to the brain via the optic nerve, so we are able to see the world around us.

The blocking of blood vessels causing stroke can be due to narrowing or occlusion of the vessel by a blood clot that impedes the normal blood circulation, as well as oxygen and nutrient supply. Eye stroke is an ophthalmic emergency due to ischaemia, causing optic nerve and retinal cells death, resulting in permanent visual damage in a short period of time.

Why do such patients need to see an Eye Specialist as soon as possible?

1. Some patients may need urgent eye surgery to prevent visual loss in the sick eye; the earlier the surgery, usually the better the visual outcome
2. Some patients may need urgent steroid treatment to prevent visual loss in the sick eye and the other eye in giant cell arteritis
3. Some patients may have associated life-threatening diseases, such as brain stroke, heart diseases and giant cell arteritis

Common Symptoms and Types of Eye Stroke

The common symptoms of eye stroke include sudden and painless loss of vision in one eye but may become bilateral. A dark shadow or defect in the visual field can be seen, and a central scotoma may be present.

There are different types of eye stroke, depending on the structures affected:

Ischaemic Optic Neuropathy

Ischaemic Optic Neuropathy (ION) is caused by the compromised blood supply to the optic nerve. The condition can be transient. Vision may be affected for a few seconds or minutes and then returns to normal. There are arteritic and non-arteritic forms of IONs. The arteritic form is often caused by giant cell arteritis which is more severe, while the non-arteritic form is more commonly seen.

Retinal Artery Occlusion

When the blood flow through the central retinal artery is occluded, the oxygen supply to the entire retina is interrupted. This is known as Central Retinal Artery Occlusion (CRAO). Patients usually experience sudden onset of visual loss over the entire visual fields. The visual loss can be transient and may last for seconds to hours before Retinal Artery Occlusion. Since the visual loss may herald a cerebral stroke, patients may need urgent referral to neurology / acute stroke management services.

In Branch Retinal Artery Occlusion (BRAO), blood perfusion only compromised in a branch of the retinal artery. Therefore, BRAO often occurs with a more focal visual loss as only part of the retina is involved.

Retinal Vein Occlusion

If the blockage occurs in the retinal veins draining out of the eye, blood and other fluids may build up and cause ischaemia and macular edema. Lack of oxygen in the retina may also occur and neovascularisation (the growth of abnormal blood vessels) may develop in the eye.

Central Retinal Vein Occlusion (CRVO) is caused by the obstruction of the main vein while Branch Retinal Vein Occlusion (BRVO) is due to the obstruction of a small branch of retinal veins. The severity of vision loss in BRVO is generally lesser than that of CRVO.



Risk Factors

Certain risk factors and medical conditions may increase the risk of eye stroke. These include:

- Smoking
- Hypertension
- Hyperlipidemia
- Hypercholesterolemia
- Hypotension
- Cardiac Arrhythmia
- Diabetes
- Glaucoma
- Thrombosis
- Obstructive sleep apnea
- Transient ischaemic attacks (TIA) or cerebral vascular accidents
- Atherosclerotic cerebrovascular or cardiovascular diseases
- Use of certain drugs including oral contraceptive pills and erectile dysfunction medications
- Other rare blood disorders, e.g. polycythemia, sickle cell disease, hypercoagulable state, etc.