

DEPARTMENT OF  
**OPHTHALMOLOGY**

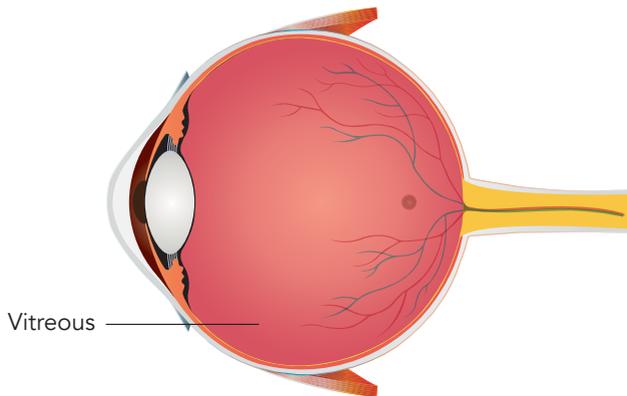
Intravitreal Injection



You have been given this leaflet because your ophthalmologist (eye doctor) believes you need an intravitreal injection to treat your eye condition. This information booklet explains the injection procedure, risks and benefits, and how to care for your eyes.

### What is an Intravitreal Injection?

An intravitreal injection is an injection into the vitreous cavity of the eye. Not all medications will reach the retina when given as tablets or eye drops. Therefore this method is used to treat retinal conditions as it delivers the medication closer to the retina.



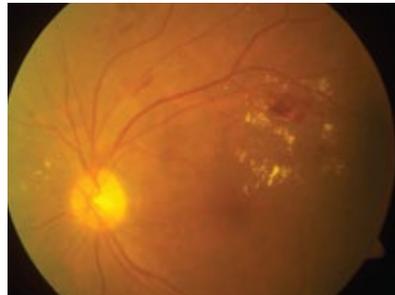
### Why do I need an Intravitreal Injection?

Your doctor may recommend intravitreal injections to treat certain retinal conditions where there are abnormal blood vessels that leak or bleed under or within the retina, causing damage to the retinal cells and photoreceptors. When the leakage and bleeding occurs at the macula (most sensitive part of the retina), patients can lose central vision.

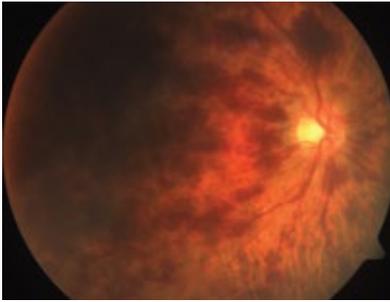
### The common conditions where this occurs include:



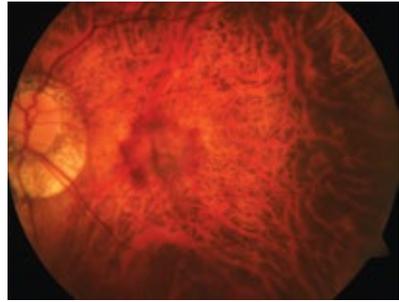
Wet age-related  
macular degeneration



Diabetic macular oedema



Retinal vein occlusion



Myopic choroidal neovascularisation

### What will be injected and how does it work?

#### Common medications that are injected include:

*Anti vascular endothelial growth factor (anti-VEGF):* Vascular endothelial growth factor (VEGF) is a locally produced hormone that results in the growth of abnormal new blood vessels. These new blood vessels are at risk of bleeding and leakage as well. When the leakage and bleeding occur at the macula, patients can lose central vision. Anti-VEGF stops these blood vessels from growing and controls the leakage of fluid and blood.

*Steroid:* Steroids have anti-inflammatory properties. Inflammation can cause blood vessels to be leaky and if severe, causes tissue damage and vision loss. Steroids reduce inflammation and prevent tissue damage.

Your ophthalmologist will assess you and advise you on the appropriate treatment.

### How is the treatment given?

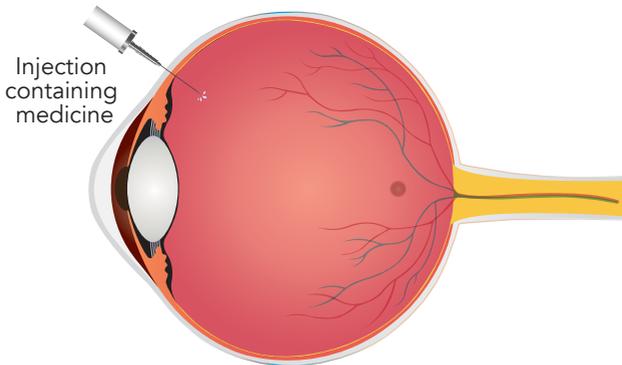


Intravitreal injections are performed either by a doctor or a registered nurse practitioner who has undergone the appropriate stringent accreditation training. The injection is conducted in the clinic treatment room with you lying comfortably in the examination chair. The entire

procedure takes 10 minutes although the injection itself is over in less than 10 seconds. You may experience some discomfort, similar to having blood taken from your arm. You do not need to fast before the procedure.

You can expect the following to occur although there may be minor variations in sequence depending on the technique employed by the doctor or nurse.

- Local anaesthetic drops will be applied to numb your eye and minimise discomfort.
- Your eyelids and surface of the eye will be cleaned with an antiseptic solution to prevent infection.
- A speculum will be inserted to keep your eyelids open during the injection.
- More antiseptic and anaesthetic drops will be applied over the eye at the injection site.
- The injection site is marked with calipers and your eye is stabilised with forceps or a cotton bud.



**Illustration demonstrating a fine needle entering the vitreous cavity during intravitreal injection.**

- The medication is injected into your eye with a very fine needle.
- Antibiotic drops may be applied to the injection site.
- Your vision will be assessed immediately after by checking if you are able to detect hand movements or if you are able to count fingers.
- In some cases, the doctor may decide to let out some fluid from the front part of the eye, especially in cases of glaucoma (high pressure in the eye).

### **What happens after the treatment?**

After the procedure you will have to wait to have your blood pressure checked. You may leave the hospital after the nurse has taken your blood pressure and has assessed that you are well enough to go home. Before you leave, you will be given the date for your next appointment.

Most patients require regular injections at intervals of four weeks or longer, depending on the drug injected and the treatment response. You will be reviewed at regular intervals (timing to be decided at each visit) where your ophthalmologists will decide if further treatment is required to maintain the benefits of therapy.

### **Who should not be treated with anti-VEGF?**

**You should not be given anti-VEGF if you have any of the following conditions:**

- Allergy to anti-VEGF or any of its ingredients.
- If you have an infection in or around either eye or severe infection anywhere in your body.
- If you are trying to become pregnant, are already pregnant, or are breastfeeding.

**Anti-VEGF should be used with caution in patients with the following conditions:**

- If you have had a heart attack or a stroke in the last three months.
- If you have uncontrolled angina or uncontrolled high blood pressure.

**Please inform the doctor if there are any changes in your medical condition.**



## What are the risks with these injections?

As with any medical procedure, there is a small risk of complications following the intravitreal injection. Most complications that might occur are from the injection itself, rather than the drug. For most patients, the benefit of the treatment outweighs the small risk of injection injury.

The following are the major potential risks and side effects of intravitreal injections. These risks are rare. Significant loss of vision due to this treatment is very uncommon.

- Endophthalmitis (serious eye infection occurring in one in 2,000 cases)
- Retina detachment
- Elevated eye pressure
- Bleeding in the eye
- Inflammation
- Cataract

\*This is not an exhaustive list

Some common side effects that could occur include:

- Red eye or subconjunctival haemorrhage. This is very common and harmless, and occurs at the point of needle entry on the white part of your eye (conjunctiva).
- Sore and gritty eye (this is often due to the antiseptic used and lasts for a few days).
- Floaters.
- Flashing lights or swirls of light (this occurs immediately after the injection and lasts for a few seconds only).

In addition to the above, systemic risks like heart attack, stroke and deaths from vascular events have been reported with **systemic** anti VEGF medications. However, the dose used for **intravitreal** injections is about 1:1000 of the systemic dose. In multiple studies, it has not been shown that injecting this tiny amount of anti-VEGF agent(s) increases the baseline annual stroke risk (0.44 – 1.7%) or heart attack risk (0.6 - 2.85%) of elderly patients except among those who had recent stroke(s) or heart attack(s).

Please inform your doctor if you had suffered from heart attack, angina or stroke in the last 3 months.

If you have any concerns, please discuss with your doctor.

### Can other medicines or food affect anti-VEGF treatments?

Anti-VEGF and certain other medicines can interact with each other. Inform your eye surgeon about all the medicines you take, whether prescription or non-prescription medicines, including blood pressure medication, warfarin, aspirin, and vitamins.

### Do I need to take any special precautions?

There are no special precautions following intravitreal injections. It is recommended that you avoid getting water into your eye or swimming for the first 5 days. You can travel, but if you do develop any of the problems described earlier, please consult an ophthalmologist urgently.

### WHAT TO DO IN AN EMERGENCY?

Please call us at Tel: 8126 3632 during office hours if you experience the following:

- **Progressive pain, redness, swelling and sensitivity to light.** This may indicate infection and normally occurs in the first week after injection.
- **Excessive discharge** from the eye
- **Deterioration of vision**
- **Flashes of lights and/or floaters**

Office hours:

- Monday – Friday: 8am – 5pm
- Saturday: 8am – 12noon

\*Closed on Sundays and Public Holidays.

After office hours, you are advised to seek treatment at the Emergency Department (A&E), Basement 1, Tan Tock Seng Hospital.

### **Clinic Appointments**

Tel: (65) 6357 7000  
Email: [contact@ttsh.com.sg](mailto:contact@ttsh.com.sg)  
Website: [www.ttsh.com.sg](http://www.ttsh.com.sg)

### **LASIK Enquiries**

Tel: (65) 6357 2255  
Email: [lasik@ttsh.com.sg](mailto:lasik@ttsh.com.sg)  
Website: [www.ttshlasik.com.sg](http://www.ttshlasik.com.sg)



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[patienteducation@ttsh.com.sg](mailto:patienteducation@ttsh.com.sg)



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