



INJECTABLE TREATMENTS FOR RETINAL DISEASES

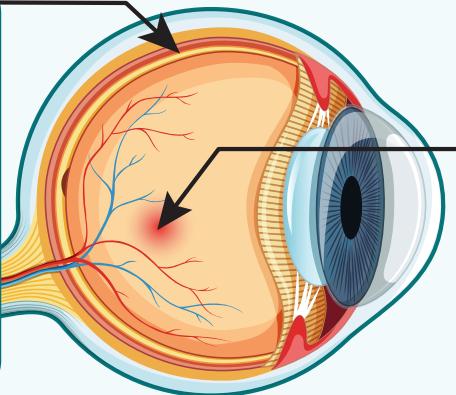
What are retinal diseases?

Retinal diseases refer to a group of disorders that affect the cells in the back of the eye (retina) causing **vision problems** or even vision loss. They have different causes, but common risk factors include:

- **Older age**
- **Long-term health conditions**
(such as diabetes and high blood pressure)
- **Lifestyle choices**
(such as smoking, poor nutrition or excessive alcohol consumption)

The back of the eye is lined with a thin layer of tissue known as the **retina**.

It captures light and sends signals to the brain to create visual images that we see.



The **macula** is a small area in the centre of the retina that controls what we see straight ahead (**central vision**).

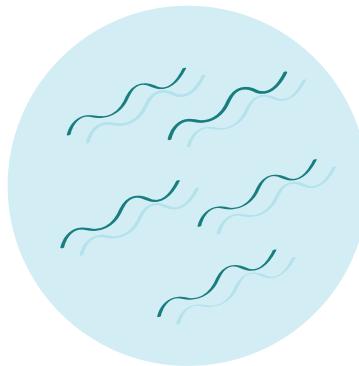
It enables us to see **fine details and colour** in our daily activities.

A normal eyeball

Symptoms of retinal diseases usually include:



Blurred central vision



Wavy lines



Some of the vision-threatening retinal diseases seen in Singapore include:

1. Diabetic macular oedema

Uncontrolled high blood sugar levels in people with diabetes can damage the blood vessels in the retina, allowing fluid and blood to leak into the macula and cause swelling (**oedema**). This is known as **diabetic macular oedema**. One or both eyes can be affected.¹

2. Age-related macular degeneration

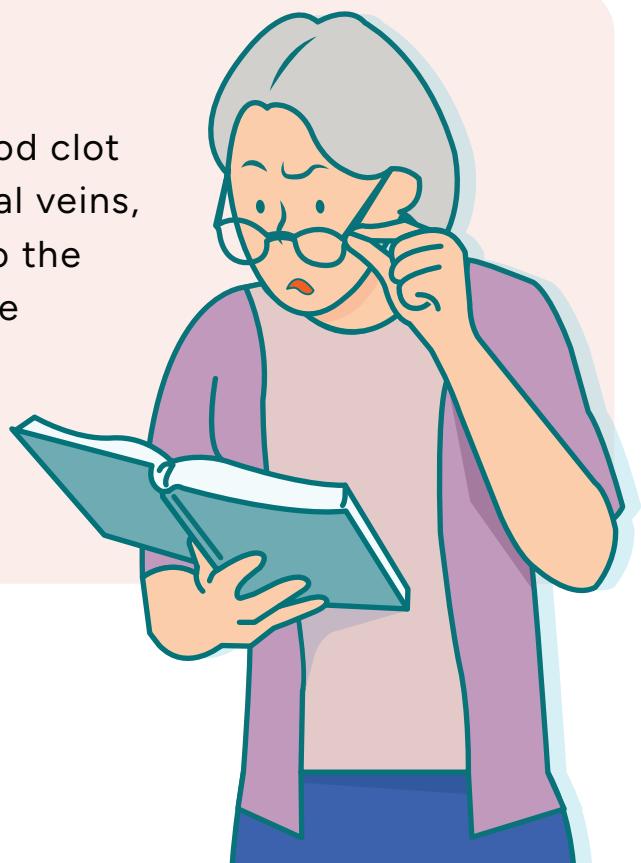
Age-related macular degeneration happens when the **macula** breaks down (degenerates) with age. It typically affects people **aged 50 years or older**. There are two forms of age-related macular degeneration — wet (neovascular) or dry (non-neovascular).

The **wet form** occurs when blood vessels behind the retina start to grow under the macula, causing blood and fluid leakage and **rapid** central vision loss. The **dry form** occurs when the macula thins over time, **gradually** blurring central vision. The dry form is more common, and it progresses more slowly than the wet form.²

3. Retinal vein occlusion

Retinal vein occlusion happens when a blood clot or blockage (**occlusion**) occurs in the retinal veins, causing reduced blood flow and damage to the retina. Blood and fluid can also leak into the macula, causing **macular oedema**.

It mostly occurs in people **aged 60 years or older**. Usually, only one eye is affected.



How are these retinal diseases treated?

Early detection and **treatment**, usually with anti-vascular endothelial growth factor (**anti-VEGF**) drugs, can preserve or improve vision in patients with **diabetic macular oedema**, **wet age-related macular degeneration** or **macular oedema following retinal vein occlusion**.

Laser treatment, steroid injections or surgery may be needed for some patients. Nutritional supplements can also be used to help prevent progression from dry to wet age-related macular degeneration.

Other things that you can do to help prevent these conditions from worsening include:

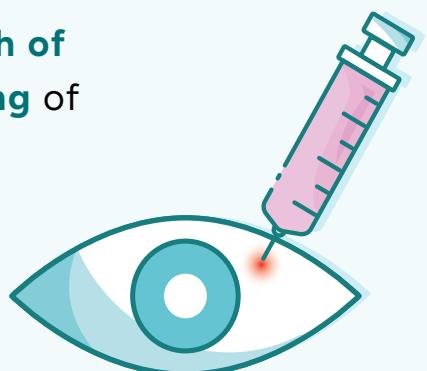
- eating a healthy diet
- exercising regularly
- quitting smoking
- maintaining normal blood sugar, blood pressure and cholesterol levels



What are anti-VEGF treatments?

Anti-VEGF treatments are used to **prevent the growth of abnormal blood vessels** in the eye and reduce **swelling** of the macula. This helps to improve or stabilise vision.

Anti-VEGF treatments are given as **injections directly** into the eye by a trained doctor or nurse. This allows the drug to be delivered **closer** to the retina and work more effectively than oral drugs or eye drops.



Injection into the eye

Aflibercept, **bevacizumab**, **faricimab** and **ranibizumab** are used to treat some retinal diseases in Singapore. Your doctor will assess your vision, symptoms, treatment preferences and medical history, and advise which treatment is suitable for you.

What does the evidence from clinical studies say?

ACE reviewed all available clinical evidence and received clinical advice from doctors about each treatment.³⁻⁵

Aflibercept, bevacizumab, faricimab and ranibizumab are safe and likely to be **as effective as each other** in improving vision for patients with diabetic macular oedema, wet age-related macular degeneration and macular oedema following retinal vein occlusion.



Subsidised treatments

- ✓ Aflibercept
- ✓ Bevacizumab
- ✓ Faricimab[#]
- ✓ Ranibizumab

Treatment costs are subsidised by **40% to 75%** for eligible patients



[#]Faricimab is subsidised for diabetic macular oedema and wet age-related macular degeneration only

Key messages

Aflibercept, bevacizumab, faricimab and ranibizumab are subsidised for treating diabetic macular oedema and wet age-related macular degeneration. Aflibercept, bevacizumab and ranibizumab are also subsidised for treating macular oedema following retinal vein occlusion.

The treatment that you need will depend on different factors such as your vision, symptoms, side effects, preferences, medical history and any other medicines that you are taking. **Discuss** with your **doctor** which treatment is suitable for you. You can also speak to a **medical social worker** if you need financial assistance for any treatment.

Sources

1. www.healthhub.sg/well-being-and-lifestyle/personal-care/too-much-eye-candy-the-growing-concern-of-diabetic-retinopathy
2. www.healthhub.sg/well-being-and-lifestyle/personal-care/keeping-an-eye-on-your-eyes
3. ACE Technology Guidance on Ranibizumab for treating age-related macular degeneration, diabetic macular oedema and retinal vein occlusion, 2022
4. ACE Technology Guidance on Anti-vascular endothelial growth factors for treating diabetic macular oedema and age-related macular degeneration, 2025
5. ACE Technology Guidance on Aflibercept and faricimab for treating macular oedema secondary to retinal vein occlusion, 2025



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