

# LOSS OF VISION

Diabetes can lead to diabetic retinopathy,  
which, in turn, can cause  
severe vision loss  
and even blindness.

**D**id you know that diabetes is one of the leading causes of blindness in adults? One major eye problem in people with diabetes is diabetic retinopathy. It occurs when diabetes weakens or damages blood vessels in the eye.



Particularly susceptible are those who have had diabetes for many years, have poor diabetes control and high blood pressure, or have had previous stroke and heart disease incidence.

If your blood glucose level has stayed too high for too long, it blocks off the small blood vessels that keep the retina healthy. Your eye will try to grow new blood vessels, but they will not develop well. They start to weaken, then blood and fluid leak into your retina. Nerve fibers in the retina may begin to swell. Sometimes the central part of the retina (macula) begins to swell (macular edema), causing blurring of vision. As your condition worsens, more blood vessels become blocked and closed off, causing the growth of new, abnormal blood vessels in the retina (proliferative diabetic retinopathy). Scar tissue builds up as new blood vessels grow in your eye. This extra pressure can cause your retina to detach. It also leads to glaucoma and other problems that may result in blindness.

Macula edema, or proliferative diabetic retinopathy, can be treated using anti-VEGF injection or retinal laser treatment. The injection or laser stops new vessels from leaking and growing. Although the treatment procedures cannot restore lost vision in some cases, it can — combined with follow-up care — reduce your chance of blindness by as much as 90%.

In the late stages of the disease, if the retina has become detached or a lot of blood has leaked into your eye, your doctor may suggest vitrectomy. This is a surgery to remove scar tissue, blood, and cloudy fluid from inside the eye. Keeping your blood sugar and blood pressure under control will help to slow down diabetic retinopathy, and may even prevent it. It also helps if you quit smoking.

It's important to get an annual dilated eye examination to spot early signs of the disease. Women with diabetes who become pregnant require a comprehensive eye examination during the first trimester and a close follow-up with an ophthalmologist throughout the pregnancy.

Diabetics also have a higher risk of developing open-angle glaucoma, where the increased pressure in the eye can damage its nerves and blood vessels, causing changes in vision. There may be no symptoms until the disease is far in advance, with significant vision loss. Symptoms can include headaches, eye aches or pain, blurred vision, watering eyes, halos around lights, and loss of vision.



## Dr Leo Seo Wei

### Ophthalmologist

Bestowed with numerous service excellence awards since she began her career as an ophthalmologist, Dr Leo Seo Wei has published several peer-reviewed articles, and presented and performed live surgeries at international conferences in Asia-Pacific, Europe and USA.

Besides managing all aspects of general ophthalmology — from cataract to LASIK surgery — her areas of interest are strabismus surgery (adult and paediatric) and paediatric ophthalmology, including anterior segment diseases, refractive errors and learning disabilities in children.

She graduated from the medical school of the National University of Singapore (NUS) in 1996 with a Gold Medal and Book Prize in Ophthalmology. She then obtained her Membership of Royal College of Surgeons of Edinburgh (Ophthalmology) in 2000 and Master of Medicine (Ophthalmology) in 2001. After obtaining the Fellowship of Royal College of Surgeons of Edinburgh (FRCSEd (Ophth)) in 2004, she was inducted as a Fellow of the Academy of Medicine Singapore (Ophthalmology) in 2004 before moving to the United States to complete 2 clinical fellowships in Ann Arbor and Los Angeles.

Prior to starting private practice, she was Senior Consultant and Head, Paediatric Ophthalmology & Strabismus, NHG Eye Institute. She has been a committee member of the American Academy of Ophthalmology since 2016. She is a reviewer for many journals, including *Survey of Ophthalmology*. She is currently in the Scientific Bureau of the World Society of Paediatric Ophthalmology & Strabismus, and a board member of Singhealth's Centralised Institutional Research Board.

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## Fast facts

**1** When high blood glucose level blocks small blood vessels in the retina, your eye will grow new ones, but they will not develop well and can leak.

**2** Diabetic retinopathy is treated using injection of anti-VEGF into the eye, retinal laser photocoagulation, and vitrectomy (late stage).

**3** Keeping your blood sugar and blood pressure under control will help to slow down and may even prevent diabetic retinopathy.