See The Possibilities

The Big Five Serious Eye Conditions

Diabetic Retinopathy

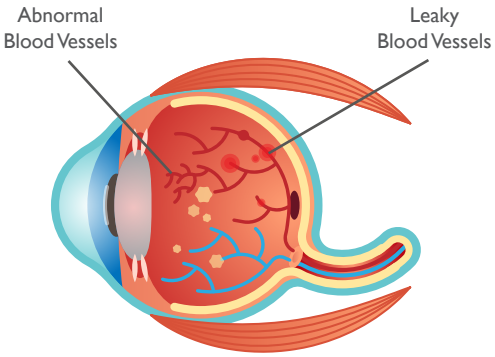
Diabetic retinopathy can happen when the blood vessels in the retina become damaged due to diabetes.

What is diabetic retinopathy?

Diabetic retinopathy is an eye disease that commonly affects people with diabetes mellitus. If you have diabetes mellitus, your body does not use and store glucose (sugar) properly, leading to high sugar levels in the blood.

Over time, high blood sugar levels can damage blood vessels in the retina (the inner layer of tissue that lines the back of the eye). The retina is composed of a network of nerves that sense light and help to send images to the brain. Damage to the blood vessels in the retina can lead to vision loss.

Diabetic eye



Normal vision

Vision loss due to diabetic retinopathy

Stages/Types of Diabetic Retinopathy

Nonproliferative diabetic retinopathy (NPDR)

In this early stage, tiny blood vessels within the retina leak blood or fluid, causing the retina to swell or to form deposits called exudates. Many people with diabetes have mild NPDR that does not affect their vision.

Macular edema

Refers to the swelling or thickening of the macula (the centre of the retina that allows us to see fine details clearly) caused by fluid leaking from the retinal blood vessels. This is the most common cause of visual loss in those with diabetes.

Macular ischemia

Refers to the closing of capillaries (small blood vessels) in the retina. Vision blurs because the macula no longer receives sufficient blood supply to work properly.

Proliferative diabetic retinopathy

Refers to the growth of abnormal blood vessels in the retina. These new vessels are fragile and prone to bleeding, which obstructs vision. They can also produce scar tissue that distorts the retina or in extreme cases causes it to detach from the wall of the eye.

What can I do to prevent vision loss due to diabetic retinopathy?

If you have diabetes, early detection of diabetic retinopathy is the best protection against loss of vision.

To prevent progression of diabetic retinopathy and lower the risk of vision loss, people with diabetes should control their levels of blood sugar, blood pressure, and cholesterol. There is considerable evidence to suggest that rigorous control of blood sugar decreases the chance of developing serious proliferative diabetic retinopathy.

Visiting your ophthalmologist regularly is also recommended.

People with diabetes should schedule an eye examination at least once a year.

Pregnant women with diabetes should schedule an appointment in their first trimester, because retinopathy can progress quickly during pregnancy.

How is diabetic retinopathy diagnosed?

People with diabetic retinopathy may have few symptoms until it is very advanced and difficult to treat.

A dilated eye examination can help detect retinal changes before they affect your vision.

If the eye exam finds diabetic retinopathy, you may require a special test called fluorescein angiography or optical coherence tomography (OCT) to find out if you need treatment.

More frequent medical eye examinations may be necessary after a diagnosis of diabetic retinopathy.

How is diabetic retinopathy treated?

During the first stages of diabetic retinopathy, no treatment is needed, unless you have macular edema. Once you have advanced stages of diabetic retinopathy, there may be certain treatments to improve your vision.

Treatment options are based on the type of diabetic retinopathy diagnosed.

Treatment options for diabetic retinopathy conditions	
Macular edema	
Treatment options	*Description*
Medication: Anti-vascular endothelial growth factor (anti-VEGF) drugs	These drugs are the first line of treatment for diabetic macular edema and are injected into the eye regularly to reduce blood vessel leakage and cause abnormal blood vessels to regress, which helps reduce vision loss.
Laser: Focal laser treatment	This procedure is less commonly used now that anti-VEGF drugs are available.
Macular ischemia	
Treatment options	*Description*
None available	Unfortunately, there are currently no effective treatments.
Proliferative diabetic retinopathy	
Treatment options	*Description*
Laser: Pan-retinal photocoagulation	This laser surgery may be used to shrink the new, fragile, abnormal blood vessels and reduce the risk of bleeding. During two or more treatment sessions, your doctor places laser burns in the areas of the retina away from the macula, causing the abnormal blood vessels to shrink. While there may be some loss of side vision and night vision, this procedure can prevent severe vision loss.
Surgery: Vitrectomy	If the bleeding in your eye is severe and does not clear within a reasonable time, or if a retinal detachment is detected, an operation called a vitrectomy can be performed. During a vitrectomy, a retinal specialist removes the hemorrhage and any scar tissue that has developed, and performs laser treatment to prevent new abnormal vessel growth.

About the Canadian Ophthalmological Society

The Canadian Ophthalmological Society (COS) is a national, recognized authority on eye and vision care in Canada. As eye physicians and surgeons, we are dedicated to providing all Canadians with optimal medical and surgical eye care.

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EYE PHYSICIANS AND SURGEONS OF CANADA | MÉDECINS ET CHIRURGIENS OPHTALMOLOGISTES DU CANADA

See The Possibilities

A resource for the Canadian public on the topics of vision health, serious eye diseases, and what COS is doing to promote eye health for everyone.

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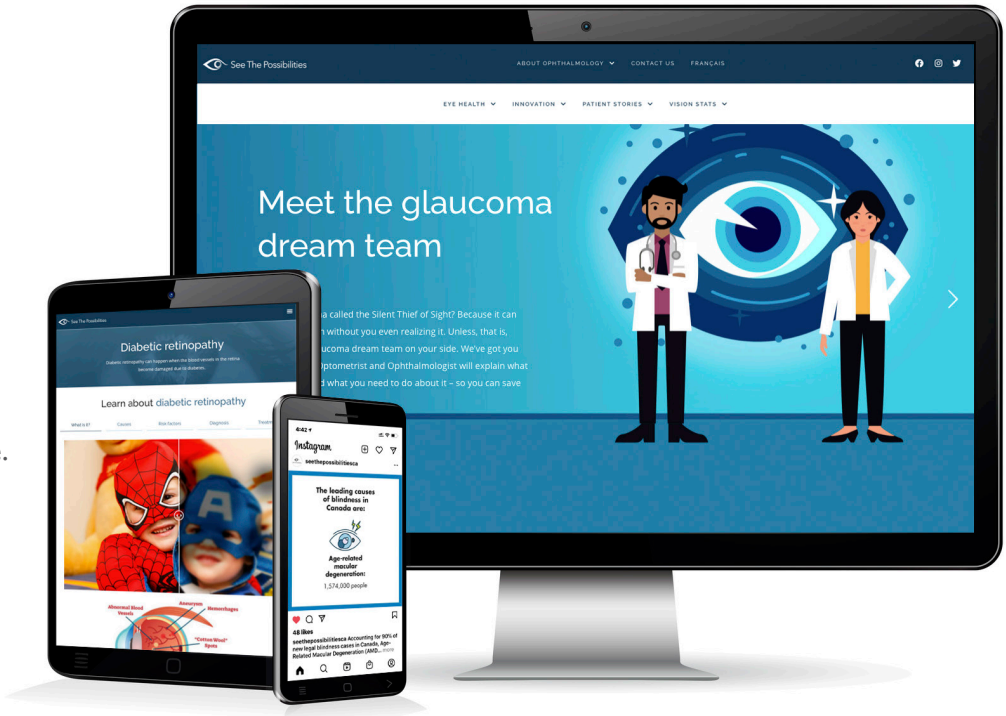

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110-2733 Lancaster Road, Ottawa ON K1B 0A9
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