



Diabetes
New Zealand

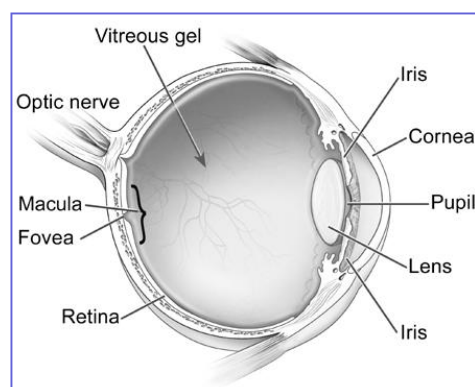
Eye complications: Understanding diabetic retinopathy

One of the most distressing complications of diabetes is reduced sight. Damage to blood vessels causes the loss of vision. **Alena Reznichenko**, Community Education Consultant working in the Blindness Awareness and Prevention area at the Royal New Zealand Foundation of the Blind, explains why you need to get your eyes checked every one to two years.

What is diabetic retinopathy?

Diabetic retinopathy is a complication of diabetes and one of the leading causes of blindness. It occurs when diabetes damages the tiny blood vessels inside the retina, the light sensitive tissue at the back of the eye.

In order to have good vision, you need a healthy retina. People who have diabetic retinopathy may notice no changes to their vision at first. But over time, diabetic retinopathy can get worse and cause vision loss. Diabetic retinopathy usually affects both eyes.



What are the stages of diabetic retinopathy?

Diabetic retinopathy can be divided into two major stages:

- **Non-proliferative retinopathy** Sometimes called background retinopathy, this can be mild, moderate or severe. It may occur at any time after the onset of diabetes and is often present without any visual symptoms.

Problems may include micro-aneurysms (small areas of balloon-like swellings in the retina's tiny blood vessels), dot and blot haemorrhages, and deposits called exudates that occur as a result of leaky vessels. As the retina loses nourishment, it sends signals to the body to grow new blood vessels in order to improve its sustenance.

- **Proliferative retinopathy** Neovascularisation, the growth of new, abnormal vessels, develops. They grow along the retina and the surface of the clear, vitreous gel that fills the inside of the eye.

These blood vessels do not themselves cause symptoms or vision loss. However, they have thin and very fragile walls. If they leak blood, severe vision loss and even blindness can result.

Who is at risk for diabetic retinopathy?

All people with Type 1 or Type 2 diabetes are at risk. Between 40-45% of New Zealanders diagnosed with diabetes have some stage of diabetic retinopathy. Everyone with diabetes should get a comprehensive eye exam at least every one to two years.

During pregnancy, diabetic retinopathy may be a problem for women with diabetes. To protect vision, every pregnant woman with diabetes should have a comprehensive dilated eye exam as soon as possible.

How does diabetic retinopathy cause vision loss?

Blood vessels damaged from diabetic retinopathy can cause vision loss in two ways:

- Fragile, abnormal blood vessels can develop and leak blood into the centre of the eye, blurring vision. This is **proliferative retinopathy** and is the most advanced stage of the disease.
- Fluid can leak into the centre of the macula, the part of the eye where sharp, straight-ahead vision occurs. The fluid makes the macula swell, blurring vision. This is called **macular oedema**. It can occur at any stage of diabetic retinopathy, although is more likely to

happen as the disease progresses. About half of the people with proliferative retinopathy also have macular oedema.

Seeing a dog with normal vision



Seeing a dog with vision affected by diabetic retinopathy



What are the symptoms of diabetic retinopathy?

Diabetic retinopathy often has no early warning signs.

Don't wait for symptoms. Be sure to have a comprehensive dilated eye exam every one to two years.

How are macular oedema and diabetic retinopathy detected?

These are detected during a comprehensive eye exam that includes:

- **Visual acuity test** This eye chart test measures how well you see at various distances.
- **Dilated eye exam** Drops are placed in your eyes to widen, or dilate, the pupils. Your eye care professional uses a special magnifying lens to examine your retina and optic nerve for signs of damage and other eye problems. After the exam, your close-up vision may remain blurred for several hours.

Your eye care professional may suggest a **fluorescein angiogram** to identify any leaking blood vessels and recommend a specific treatment. A special dye is injected into your arm. Pictures are taken as the dye passes through the blood vessels in your retina.

What are the symptoms of proliferative retinopathy if bleeding occurs?

At first, you will see a few specks of blood, or spots, 'floating' in your vision. If this happens,

see your eye care professional as soon as possible. You might need treatment before more serious bleeding occurs, often during sleep.

Sometimes, without treatment, the spots clear, and you'll see better. However, bleeding can reoccur and cause severely blurred vision and even blindness. The earlier you receive treatment, the more likely it will be effective.

How is diabetic retinopathy treated?

In the non-proliferative stage no treatment is required, unless you have macular oedema.

To prevent progression of diabetic retinopathy, control your blood glucose levels, blood pressure and blood cholesterol.

Proliferative retinopathy is treated with laser surgery called scatter laser treatment. It helps to shrink the abnormal blood vessels. Your doctor places 1,000 to 2,000 laser burns in the areas away from macula, causing the abnormal blood vessels to shrink. Although you might notice some loss of your side vision, scatter laser treatment can save the rest of your sight.

Scatter laser treatment works better before the fragile, new blood vessels have started to bleed. That is why it is important to have regular, comprehensive eye exams.

Even if bleeding has started, scatter laser treatment may still be possible, depending on the amount of bleeding. If the bleeding is severe, you may need a surgical procedure called vitrectomy where blood is removed from the centre of your eye.

What can I do if I have already lost some vision?

Ask your eye care professional about low-vision services and devices that may help you make the most of your remaining vision. Ask for a referral to a specialist in low vision.

Many community organisations and agencies, such as the Royal New Zealand Foundation of the Blind, offer information about low-vision counselling, training and other special services for people with visual impairments. A nearby school of medicine or optometry may also provide low-vision services.

The Royal New Zealand Foundation of the Blind
www.rnzfb.org.nz 0800 24 33 33