

Diabetic Retinopathy

Diabetes and Your Eyes

Diabetes is not just a condition of blood sugar — over many years, it quietly affects some of the body's most vital organs: the kidneys, the heart, the peripheral nerves, and the eyes. When it reaches the retina, vision itself is at risk.

The encouraging news is that diabetic eye disease is largely preventable, and when detected early, very effectively treatable. But timing matters enormously — which is why every diabetic patient needs regular eye checks, even when their vision feels perfectly fine.

How Does Diabetes Damage the Retina?

The Leaking Capillaries

The retina is nourished by an intricate network of tiny blood vessels called capillaries. Prolonged high blood sugar gradually damages the walls of these capillaries, causing them to leak fluid and its contents into the surrounding tissue. This leads to swelling — and when that swelling occurs in the macula (the central zone of the retina responsible for your sharpest vision), it directly threatens your ability to read, recognise faces, and see fine detail.

This condition is called **diabetic maculopathy**, and it is the most common cause of vision loss in diabetic patients. In its early stages, the damage is reversible. Left untreated, it leads to permanent vision loss.

The Blocked Circulation

At the same time, some capillaries become blocked altogether — starving areas of the retina of oxygen and nourishment. The body's response to this shortage is to grow new blood vessels. Unfortunately, these new vessels are structurally fragile and poorly formed. Rather than solving the problem, they cause new ones:

- They bleed easily, causing sudden haemorrhages inside the eye
- They trigger scar tissue formation that pulls on the retina
- They can lead to retinal detachment and severe, irreversible vision loss

This advanced stage is called **proliferative diabetic retinopathy** — and it is a serious, sight-threatening emergency.

Treatment

1. Controlling Diabetes — The Foundation of Everything

No treatment works well unless diabetes itself is well managed. In the earliest stages of diabetic retinopathy, bringing blood sugar under tight control can actually reverse the changes and allow the retina to recover on its own.

Beyond blood sugar, the following must also be optimised:

- **Blood pressure** — high blood pressure accelerates retinal damage
- **Blood lipids (fats)** — elevated cholesterol worsens leakage and exudate formation
- **Anaemia** — low haemoglobin, often caused by diabetic kidney disease, reduces the oxygen-carrying capacity of blood and makes retinal ischaemia worse

Managing diabetes well is not just good for your eyes — it protects your kidneys, heart, and nerves simultaneously.

2. Anti-VEGF Injections — The Modern Treatment for Diabetic Maculopathy

When the macula swells and vision drops, the treatment of choice today is an injection of an anti-VEGF medication directly into the vitreous cavity of the eye. This is a minor, well-tolerated procedure performed under local anaesthesia.

How do they work?

VEGF (Vascular Endothelial Growth Factor) is a protein the body produces in excess when retinal blood vessels are under stress. It drives leakage, swelling, and the formation of abnormal new vessels. Anti-VEGF medicines are precision-engineered antibodies that neutralise this protein at a molecular level — reducing swelling, stabilising the retina, and in many cases meaningfully improving vision.

The treatment schedule

Anti-VEGF injections are not a one-time fix. They are given as a course — typically monthly initially — and then tapered to a maintenance schedule as the retina responds. The number required varies from patient to patient.

Which medicines are available?

Several anti-VEGF agents are in use today, including:

- **Bevacizumab** (Avastin)
- **Ranibizumab** (Accentrix; Indian equivalents include Razumab, Ocewa, Macubrite)
- **Aflibercept** (Eylea; Indian equivalent Anyra)

- **Faricimab** (Vabysmo)
- **Pegaptanib** (Macugen)

Occasionally, a patient's retina stops responding to one molecule after multiple injections — a phenomenon called tachyphylaxis. In such cases, switching to a different anti-VEGF agent often restores the response.

What about steroid injections?

In some patients — particularly those who do not respond adequately to anti-VEGF — steroid injections may be used. Triamcinolone and the sustained-release implant Ozurdex are both effective at reducing retinal swelling. Your surgeon will discuss which approach is most appropriate for you.

3. Laser Treatment

Laser has been used in diabetic retinopathy for decades, and while its role has reduced with the arrival of anti-VEGF injections, it remains an important tool.

- **Focal laser** targets specific leaking blood vessels in the macula, identified either clinically or on fluorescein angiography. It is used selectively when discrete leaks are causing macular swelling.
- **Pan-retinal photocoagulation (PRP)** is a more extensive laser treatment applied across the peripheral retina in proliferative diabetic retinopathy. By reducing the areas of oxygen-starved retina, it lowers the stimulus for abnormal blood vessel growth. It is used when there is vitreous haemorrhage, a high risk of haemorrhage, or advanced proliferative disease.

Laser also reduces VEGF levels, though less powerfully than anti-VEGF injections.

4. Vitrectomy Surgery

When diabetic retinopathy reaches an advanced stage — with recurrent bleeding into the vitreous cavity or tractional retinal detachment involving the macula — surgery becomes necessary.

What does the surgery involve?

The vitreous jelly, along with the scar tissue and membranes that have formed on the retina's surface, is carefully removed. This relieves the traction pulling on the retina, allows it to settle back into position, and clears the haemorrhage that is blocking vision.

Modern vitrectomy uses a minimally invasive system (MIVS — Micro-Incision Vitreous Surgery) with instruments so fine that stitches are often not required. This has significantly improved both surgical precision and recovery.

What results can you expect?

Despite the complexity of these cases, results are good in 80–90% of patients. Vision improvement is gradual — early changes are visible around three months after surgery, and improvement can continue for up to a year.

Possible complications

- **Recurrent vitreous haemorrhage** in the postoperative period
- Retinal detachment
- Cataract development

These complications occur in a minority of patients, and most are manageable with further treatment. Your surgeon will discuss the risk profile specific to your situation before the operation.

A Word on Regular Monitoring

Diabetic retinopathy is a progressive condition that can advance silently — often without any change in vision until significant damage has already occurred. This is why routine retinal screening is so important for every person with diabetes, regardless of how well their sugar is controlled or how good their vision feels.

Caught early, it is highly treatable. Caught late, the options become more limited and the outcomes less predictable.

If you have diabetes and have not had a retinal examination in the past year, please get in touch with our clinic to arrange one.