



EYE SURGERY & DIABETES

I have diabetes: Can I go for LASIK, cataract surgery or any eye surgery? A simple answer to the above question is “It depends.” Many of you may wonder how diabetes is related to or affects the decision for eye surgery. So, let’s start the article with the basic knowledge of diabetes and its possible complications on our eyes.

The general understanding of Diabetes Mellitus is the condition of having high blood sugar level. This is because the body is unable to fully utilise the sugar in bloodstream, either due to an inadequate hormone called Insulin, or ineffective Insulin. This systemic disease or condition affects the walls of small blood vessels in the body and it can affect multiple organ systems, from the heart to kidney.

There are two different types of diabetes:

- Type 1 occurs when the body does not produce insulin. This usually occurs in early adulthood or in teenage years.
- Type 2 diabetes occurs when the body does not produce sufficient insulin for proper function and is most prevalent in overweight patients with poorly controlled diet and weight.

How diabetes affects the eye

Examples of eye complications due to diabetes include fluctuations in vision, cataract, glaucoma and the most serious condition—retinopathy.

People with diabetes are 60% more likely to develop cataracts at a younger age and the progression of cataract tends to be faster as well.

Risk of suffering from glaucoma is 40% higher in people with diabetes also. These risks make diabetes one of the leading causes of blindness nowadays.

In these conditions, the light sensitive tissue at the back of the eye, also known as the retina is being affected. Poorly controlled blood sugar levels can cause the blood vessels to leak or haemorrhage, causing changes in vision. In serious cases, there may be growth of new blood vessels, causing considerable damage to the back of the eye.

In diabetic macular edema, there is a build-up of fluid at the most central part of the retina. This portion of the eye is responsible for clear central vision. When swelling occurs, the patient will experience blurring of vision, and the blurring of vision cannot be relieved even with the use of glasses.

The answer “It depends” is based on the considerations below:

LASIK Surgery in Diabetic Patients

Fluctuating Prescription

This may occur as a result of uncontrolled blood sugar level. This brings difficulties to the ophthalmologist or refractive surgeon on the programming of laser machines, as the prescription is what the laser is programmed to correct. In other words, in a person with well-controlled blood sugar level, the laser surgery will be able to correct the prescription accurately. Most surgeons will ensure that blood sugar level is stable prior to refractive surgery.

Slower or Delayed Healing of Cornea

Generally, diabetics tend to have slower and less efficient healing of cornea following LASIK or Refractive Surgery. Some surgeons may advise them to go for certain types of laser surgery with quicker healing time.

Diabetic Retinopathy

If a diabetic has been diagnosed to have retinopathy and vision is affected, most surgeons will not advise him/her to go for LASIK or Refractive surgery.

Nevertheless, there are a lot of cases whereby LASIK or Refractive surgery were successfully carried out in diabetics. The best way to determine your suitability for LASIK or Refractive Surgery is to discuss with your eye doctor. To ease the decision making, you should ask your GP for a letter stating your blood sugar level before meeting your eye doctor. Post-operative follow-ups are especially important for those who suffer from diabetes.

Cataract Surgery in Diabetic Patients

Diabetes can limit the immune system's ability to fight off infection, especially when blood sugar level is poorly controlled. This increases surgical risk. Therefore, it is important to consider the state of a person's immune system when deciding on the timing of a surgery. Modern cataract surgery can restore good vision and correct myopia, hyperopia, and astigmatism. However, with the presence of diabetic eye disease, cataract surgery may put additional stress on the eye and may lead to swelling at the back of the eye, progressive retinopathy, resulting in poor surgical results.

Fluctuating Prescription

During cataract surgery, there will be an implantation of intraocular lens (IOL). IOL measurements may be incorrect due to fluctuating prescription, affecting vision post cataract surgery.

Intraocular Pressure

Uncontrolled diabetes can affect Intraocular Pressure which may lead to other vision disorders after cataract surgery, affecting its success rate.

Bleeding in the Eye

Another surgical complication associated with uncontrolled diabetes is vitreous haemorrhage. High blood sugar level weakens blood vessels, increasing the risk of haemorrhage which in turn may affect the outcome of the cataract surgery.

Diabetic Retinopathy

In eyes with significant diabetic retinopathy, cataract surgery may lead to progression and worsening of retinopathy, which can have detrimental effects on vision. In eyes with minimal diabetic changes, cataract surgery is not as likely to cause progression of retinopathy. Therefore, performing cataract surgery when diabetes is stable is beneficial for diabetic patients because it is associated with fewer complications and better postoperative recovery.

Eye doctors generally agree that cataract surgery is more challenging and not as effective when patients have fluctuating blood sugar levels. Ultimately, proper management of blood sugar is the key to successful vision correction procedures. Significant diabetic ocular pathology should be treated before cataract surgery is considered. This involves the use of lasers or intravitreal injections to control the patient's diabetic eye disease.

How can we protect our eyes?

Often times, the effects caused by diabetic retinopathy to vision is irreversible. In the early stages, patients experience mild to no symptoms at all. Hence, it is important to go for regular comprehensive eye check-ups. Should there be any signs of diabetic eye disease, early detection and treatment would bring about better prognosis for the patient. It also reduces the risk of blindness significantly. People with diabetic retinopathy may need eye exams more frequently. Women with diabetes who become pregnant should have a comprehensive dilated eye exam. In summary, your personal medical history, physical health and compliance to a diabetes management plan need to be considered before deciding any eye surgery as a viable treatment option.

About the author: Dr David Chan is Senior Consultant Eye Surgeon and Medical Director at Atlas Eye Specialist Centre. Having practised ophthalmology since 1999, his extensive experience includes research on new cataract surgical devices utilising nanotechnology.