

Diabetic Retinopathy

Patient Information

What is Diabetic Retinopathy?

- Diabetic retinopathy is an eye problem caused by diabetes mellitus. Over time, poorly managed diabetes with chronic high blood sugar levels may cause changes to the tiny blood vessels in the retina, the light-sensitive tissue at the back of the eye.
- This blood vessel damage in the retina is called diabetic retinopathy and may lead to vision loss, including blindness.

The healthy retina

In the healthy eye, the retina is the layer of tissue at the back of the eye that receives light through the cornea. The retina changes light into signals, which are sent to the brain and interpreted into the images you see. An area of the retina called the macula provides sharp central vision. The outer part of the retina surrounding the macula allows side and night vision to take place. Small blood vessels nourish the retina.

The unhealthy retina of Diabetic Retinopathy

In diabetic retinopathy, the retina becomes unhealthy because changes to its blood vessels. There are 2 types of diabetic retinopathy.

- Macular Edema occurs when blood vessels weaken and leak fluid causing swelling of the retina.
- Proliferative diabetic retinopathy is the abnormal growth of the blood vessels in response to the damage caused by nonproliferative diabetic retinopathy.

These abnormal new blood vessels are fragile and may cause bleeding into the eye or a retinal detachment.

What are the symptoms for Diabetic Retinopathy?

At first diabetic retinopathy may cause no symptoms or vision loss. However over time, you may experience:

- Blurred, darkened, or cloudy vision.
- Black spots or cobweb like shapes, which are called floaters.
- Temporary or permanent blindness.

How is Diabetic Retinopathy diagnosed?

All persons with diabetes should at the very least have a yearly eye examination by an eye doctor. Your eye examination will include questions about your general health, a vision test and an eye pressure test.

Your eyes will be dilated with medication so that the doctor can look clearly at the inside of the eyes under a machine called a slit lamp. In addition, a series of photographs of the inside of the eyes may be taken.

What can be done to help prevent Diabetic Retinopathy?

To help prevent diabetic retinopathy, follow these guidelines:

- Control your blood sugar by following your diet, measuring your blood sugars at home and taking diabetic medication as prescribed.
- Stop smoking.
- Monitor your blood pressure and blood cholesterol levels.
- Have regular eye exams.
- Get early treatment for diabetic retinopathy.

How is Diabetic Retinopathy treated?

Diabetic retinopathy is treated with laser or surgery. These procedures can prevent or reduce vision loss from the disease.

Understanding laser treatment

Laser treatment uses a highly focused beam of light that is aimed at the diseased part of the retina. It seals leaking blood vessels; dries up fluid and can destroy abnormal blood vessels. It is a safe procedure and can be done in the clinic. Treatments can take 5–20 minutes.

First your pupils are dilated with medication to make them large for the laser beam to travel through. Then your eye is numbed with an eye drop if the doctor needs to use a special contact lens against your eye.

The lens helps the doctor direct the laser beam. It is important for your head to remain still during the procedure. As the laser is applied, the doctor may ask you to look in specific directions.

You will see flashes of light during the treatment and hear a clicking sound when the laser is fired. You may occasionally feel discomfort. If you do, tell the doctor.

After the treatment you can go home right away. You should have a friend or family member drive you home. You may experience slight eye discomfort, watery eyes, seeing spots, blurry vision, and sensitivity to the sunlight for a few hours afterward. These effects will improve.

Your doctor may advise a series of laser treatments over several weeks depending on the extent and nature of disease in your eye. Laser treatment is effective in managing diabetic retinopathy, but over your lifetime you may need it more than once. Therefore, it is important to control your blood sugar levels daily and have regular checkups.

Surgery as treatment

Abnormal new vessels growing in the retina, (proliferative diabetic retinopathy), can leak blood into the gel-like, inner part of the eye called the vitreous. The new vessels can pull on the retina causing further bleeding and tears. Call your eye doctor should you notice sudden vision changes such as dark spots, flashes of light, or your vision become blocked or black. To prevent further damage to the retina, the eyes doctor may need to remove the vitreous and replace it with gas or oil. This procedure is called a vitrectomy.

A vitrectomy operation may take up to 2 hours and can be done either under a local or general anaesthetic. A local anaesthetic is a drug, which numbs your eye so that you do not feel any pain, but you remain awake. A general anaesthetic involves a number of drugs, which relax your muscles, put you in a deep sleep and prevent you from feeling pain during your operation. The eye doctor will determine which type of anaesthesia is best for your case.

What are the risks of a Vitrectomy operation?

As with any surgery there are risks of post-operative complications such as:

- Infection
- Bleeding
- Retinal detachment
- Poor vision
- High pressure in the eye
- Accelerated cataract formation

What can I expect before a Vitrectomy operation?

If the vitrectomy operation is a day case operation performed under a local anaesthetic, you will come to hospital ready for surgery in the morning, have surgery, and go home that same day.

Regardless of the type of anaesthesia, about 2 weeks before your operation, you may be asked to visit the pre-assessment clinic for a physical examination, review of blood tests, and a discussion with a nurse and/or anaesthetist. It is important to tell the nurse or doctor about any medications, including eye drops, you are taking and to bring them with you. Also remember to ask if it is okay for you to take medications the morning of your operation.

The nurse in the pre-assessment clinic will give you instructions as to how to prepare for your operation. For example, you will be asked not to eat or drink anything after midnight the night before surgery and not to wear any make-up or jewelry the morning of your operation.

What can I expect after a Vitrectomy operation?

After your operation, you will spend some time in the recovery area outside the operating room theatre. To protect the operative eye, you will be wearing an eye patch or dressing and plastic eye shield. The nurse will monitor your general condition, pulse, blood pressure and eye discomfort. Eye pain may be experienced. If so, tell the nurse. If you have nausea after surgery, the nurse can also give you an anti-nausea medication to prevent you from being sick.

You may feel a stickiness of the eye or have a small amount of fluid discharge underneath the eye dressing; this is normal. When the nurse determines you have fully recovered, you will be sent home. The day after your operation, you will generally be expected to come to the eye clinic.

It is normal for your vision to be blurry at this time, but it will improve over the weeks ahead.

The nurse will also teach you about how to take care of your eye at home. One important aspect of eye care at home is putting in eye medications.

The nurse will teach you how to do this yourself, but it would be wise to have a family member or friend with you to learn how to apply the drops in case you need assistance at home. To help you remember the correct technique, you will be provided with written instructions, as well as they will be discussed verbally with a nurse on how to use eye drop medication and also to teach you how to protect and care for your eye at home.

Usually a follow-up appointment in the surgeon's office will be arranged for you after 1 week of your operation, then at 2–4 weeks, and again at 8 weeks. It takes about 8 weeks for the eye to heal and your vision to be at its sharpest.

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