

Patient information – medical retina services

Facts about proliferative diabetic retinopathy

What is proliferative diabetic retinopathy?

Diabetic eye disease is a leading cause of visual impairment among working age adults in England and Wales. It is caused by changes to the tiny blood vessels of the retina (the light sensitive layer at the back of the eye). Proliferative diabetic retinopathy is caused by abnormal new blood vessels that grow on the surface of the retina (the light sensitive layer at the back of the eye). This is the most advanced stage of diabetic retinopathy. At this stage, you may not have symptoms, but are at high risk of vision loss.

How does proliferative diabetic retinopathy cause vision loss?

In proliferative diabetic retinopathy, the blood vessels that nourish the retina are blocked. The retina then sends signals that trigger the growth of new abnormal blood vessels. These vessels are thin and fragile. By themselves, they do not cause vision loss, but they can bleed into the

retina and the gel-like fluid that fills the eye. This is when vision loss occurs. In advanced stages of proliferative diabetic retinopathy, scar tissue pulls the retina away from the back of the eye (retinal detachment). Abnormal blood vessels can also increase the pressure within the eye (rubeotic glaucoma). If left untreated, severe vision loss and even blindness will occur.

Who is at risk of proliferative diabetic retinopathy?

People with type 1 and type 2 diabetes are at risk of proliferative diabetic retinopathy. The longer you have had diabetes, the more likely you are to develop proliferative diabetic retinopathy. Large studies have shown that the people who have good control of their blood sugar levels, cholesterol, and blood pressure are less likely to develop proliferative diabetic retinopathy.

How is proliferative diabetic retinopathy detected?

Proliferative diabetic retinopathy may be detected during your annual visit to your local diabetic eye screening programme. Digital photographs of your eye may show signs proliferative diabetic retinopathy. You may not notice changes in your vision at this stage. A referral will be made for you to the medical retina department. If you are attending clinics at Moorfields, you do not need to attend your local diabetic eye screening. When your treatment is complete, you will be discharged from Moorfields. After discharge, it is important to resume attending your annual local diabetic eye screening appointments.

What happens when I attend the medical retina clinic?

You will have a comprehensive eye examination that includes:

- **Visual acuity test:** A sight test that measures how well you see at different distances
- **Eye Pressure test:** We check the pressure of your eyes. Numbing drops may be used as part of this test
- **Dilated eye examination:** Drops are placed in your eyes to widen (dilate) your pupils so that we can examine the back of your eyes

You may also undergo tests such as a:

- **Fluorescein angiography,** a diagnostic test which involves the injection of fluorescein (yellow) dye into your bloodstream via a vein in your hand or arm, followed by a series of retinal photographs taken over several minutes. The test gives your doctor more information about the condition of your retina and this helps decide which treatment is most appropriate
- **Optical coherence tomography (OCT)** measures the amount of retinal swelling (macular oedema) which, like fluorescein angiography, helps decide which treatment is most appropriate. OCT is also used to monitor your retina over time and to show how effective treatment may have been. It is effectively 'optical ultrasound', a non-invasive test, using reflections from within your retina to provide a cross-sectional picture of the retina

How is proliferative diabetic retinopathy treated?

Proliferative diabetic retinopathy is treated with laser therapy. This is done together with improving the control of your blood sugar, blood pressure, and cholesterol levels. This can be achieved by regular visits to your general practitioner or hospital doctor. Please ask to see the **specialist diabetes nurse** at Moorfields if you wish to discuss this further. If you have very advanced proliferative diabetic retinopathy, you may require surgery.

The treatments for proliferative diabetic retinopathy are:

1. Laser therapy
2. Surgery

What is laser therapy?

This treatment uses laser to produce small areas of heat on the retina. This creates small laser burns scattered evenly across the retina. The goal of laser therapy is to cause the abnormal blood vessels to shrink and disappear. Up to 1,000 laser burns are applied in one session. Two to three sessions are usually required. Laser therapy does not improve your vision. The aim is to prevent severe vision loss.

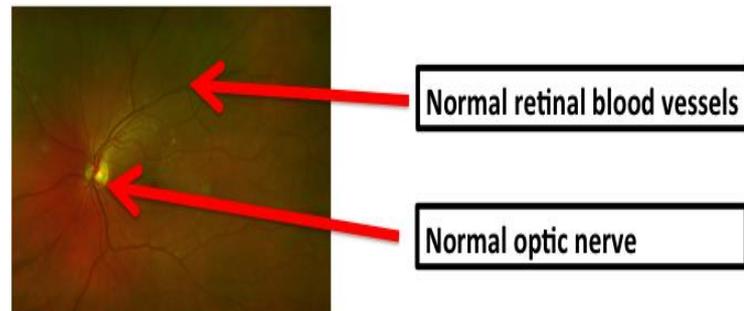
What happens during laser therapy?

Laser therapy takes place in the outpatient medical retina clinic. You will have drops to widen your pupils and numb your eye. The lights in the room will be dim. You will sit facing the laser machine and the doctor will place a contact lens on your eye. This will allow the doctor to see to the back of the eye and prevent you from blinking. During laser therapy, you will see flashes of light. You may feel a stinging sensation, which can be uncomfortable.

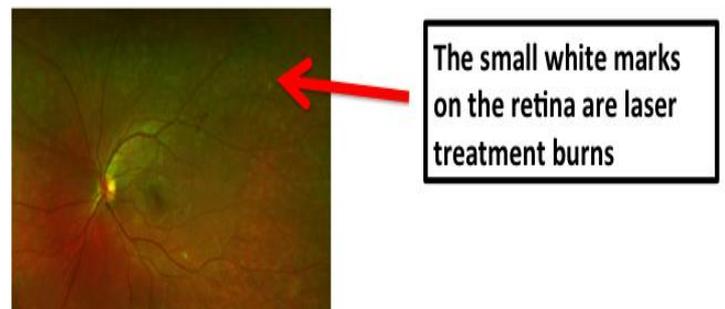
After laser therapy, your vision will be a little blurry for the rest of the day. You will need someone to accompany you home after the treatment. You may wish to bring

a pair of sunglasses as your eyes will be sensitive to bright lights.

Example of a retina without laser treatment (above) and after laser treatment (below)



A photograph of the retina without laser



A photograph of the retina after laser treatment

What are the side effects of laser therapy?

You may experience temporary worsening of vision on the day of laser therapy. This is caused by the bright flashing lights from laser treatment, and usually recovers by the next day. There is a small risk of loss of side vision (visual field) because of laser therapy. This is uncommon due to



the development of newer and safer lasers. More than 80% of people who receive laser will retain enough side vision for driving. In proliferative diabetic retinopathy, the risk of vision loss from not receiving treatment is much higher than laser therapy. Sometimes laser therapy does not work and your vision can still get worse despite treatment.

Can I drive after laser therapy?

The Driver and Vehicle Licensing Agency (DVLA) makes the decision on whether you will be able to drive. You should inform the DVLA when you have had laser therapy. They will arrange to have your side vision (visual field) tested at your local optometrist before making a decision.

What is retinal surgery for proliferative diabetic retinopathy?

In proliferative diabetic retinopathy, bleeding can occur in the retina and into the gel-like fluid that fills the eye. This blood usually clears on its own within six months. If it fails to clear, you may need surgery to remove the blood. In advanced proliferative diabetic retinopathy, scar tissue can form in the retina. This may cause the retina to pull away from the back of the eye (retinal detachment) leading to loss of vision. Surgery will be required to remove the scar tissue and reattach the retina.

How to contact the hospital

Contact the following numbers:

1. Moorfields retinal services helpline on 07872 419 211, Monday to Friday 08.00–16.30
2. Out of hours on 020 7253 3411 or go to the accident and emergency department at Moorfields Eye Hospital, City Road, London EC1V 2PD.
3. Moorfields Eye Hospital pharmacy department on 020 7566 2369, Monday to Friday 09.00–17.30

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Revision number: 1
Approved: November 2014
Review date: November 2015

**Moorfields Eye Hospital NHS
Foundation Trust
City Road, London EC1V 2PD**



Phone: 020 7253 3411
www.moorfields.nhs.uk

rights under the NHS constitution, please visit www.nhs.uk/choiceinthenhs.

Moorfields Direct advice line

Phone: 020 7566 2345

Monday to Friday, 9am to 4.30pm,
for information and advice on eye
conditions and treatments from
experienced ophthalmic-trained nurses.

Patient advice and liaison service (PALS)

Phone: 020 7566 2324 or 020 7566 2325

Email: pals@moorfields.nhs.uk

Moorfields' PALS team provides
confidential advice and support to help
you sort out any concerns you may have
about the care we provide, guiding you
through the different services available at
Moorfields. The PALS team can also
advise you on how to make a complaint.

Your right to treatment within 18 weeks

Under the NHS constitution, all patients
have the right to start their consultant-led
treatment within 18 weeks of being
referred by their GP. Moorfields is
committed to fulfilling this right, but if you
feel that we have failed to do so, please
contact our patient advice and liaison
service (PALS) who will be able to advise
you further – see above for contact
details. For more information about your