Laser Treatment for Proliferative Diabetic Retinopathy (PDR) Pan Retinal Photocoagulation (PRP)

Ophthalmology Department

We can provide interpreters for a variety of languages, information in larger print or other formats (e.g. audio) - please call us on 01932 723553.
To use the Text Relay service, prefix all numbers with 18001.
Further Information
We endeavour to provide an excellent service at all times, but should you have any concerns please, in the first instance, raise these with the Matron, Senior Nurse or Manager on duty. If they cannot resolve your concern, please contact our Patient Advice and Liaison Service (PALS) on 01932 723553 or email pals@asph.nhs.uk. If you remain concerned, PALS can also advise upon how to make a formal complaint.
Please be guided by your GP, Diabetologist or Diabetic Specialist Nurse. Do not try to change your treatments yourself. Sudden changes in sugar levels can sometimes worsen eye disease.

If you wish to obtain further information regarding Diabetic Eye disease and laser treatment for PDR, we recommend the following Internet Links:


http://www.retinalscreening.nhs.uk

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**Laser Treatment for Proliferative Diabetic Retinopathy (PDR)**

Pan Retinal Photocoagulation (PRP)

Your specialist has informed you that you have proliferative diabetic retinopathy and recommended laser treatment. Please read this information sheet and, if you have any questions, discuss this with your specialist before you have the treatment.

**What is Proliferative Diabetic Retinopathy (PDR)?**

Diabetes can damage small blood vessels in the retina. This can lead to poor circulation (Ischemic Retinopathy). In some cases, the damage can be so extensive that the retina attempts to heal itself. Damaged retinal cells can produce special chemicals (growth factors) which can lead to new blood vessels growing into the retina.

New blood vessels, unfortunately, are fragile. They can leak, releasing proteins that cause scarring. Sometimes these vessels can break and bleed.
These processes can cause severe damage to the retina, leading to vision loss, and in some cases, blindness.

How can PDR be treated?

If the condition is mild, it is sometimes possible to treat PDR by improving diabetic care (blood sugar levels), blood pressure and blood fat (Lipid) levels.

In most eyes, however, PDR has to be treated with Laser. In some cases, where laser has not been effective, surgery may become necessary.

What is Laser Treatment?

There are many different types of laser used for a variety of eye conditions.

The treatment for PDR is different to that used for correcting shortsightedness.

Laser for PDR is a well-established and effective treatment. Usually, a green colour laser (Argon or Diode 532) is used. The laser causes changes within the retina that reduce or stop the production of growth factors. In

How will I know if the treatment has been effective?

PRP is done to prevent damage to the eye. Therefore, you will not notice any improvement in vision and, as mentioned before, you might notice worsening of night vision and peripheral sight.

Your specialist will re-examine your eyes, usually about 2 months after treatment. Further laser treatments might be needed if the condition has not responded, or responded poorly, or because the condition has recurred.

Can I do anything to improve PDR or prevent it recurring?

Yes. Like all complications of diabetes, good control of your blood sugar levels, blood pressure and blood lipids can improve PDR and reduce the risk of recurrence.

With blood sugar, you must try to get the long-term sugar test (HbA1c) result under 7% and not to have too much fluctuation of the daily sugar levels.

Where possible, your blood pressure should be at or under 120/80. If your lipids are elevated, you should be on treatment for this.
Some eyes are extremely sensitive to light ("photophobic"). Sometimes treatment can be painful. If you find it difficult to tolerate the laser light, or find it painful, it is possible to administer a more complex local anaesthetic (Sub-Tenon’s anaesthesia) that will dull your vision for a while and make the procedure painless.

This same, more complex anaesthetic might be used if you are unable to keep your eyes still during the procedure as this makes safe treatment difficult.

**What about aftercare?**

There is no special aftercare. Your sight will be affected for a couple of hours due to the eye drops and the bright laser light. This will improve by itself.

You do not need to rest afterwards and can carry on with your normal diet and activities.

many cases, this causes the new blood vessels to regress.

**How effective is this treatment?**

It is important to remember that no treatment is effective in 100% of cases.

The main aim of treatment is to stop new vessel growth, and to get rid of existing new vessels. Laser is about 70-80% effective. Where laser fails, in some cases, surgery can successfully treat the problem.

Even with eyes that eventually become blind, laser can often slow down the process, delaying severe damage.

**What are the complications of laser treatment for PDR?**

**Common but non-serious problems:**

1. Laser is extremely bright light and your eye will be dazzled (like looking directly at a camera flash) for a while.
2. Each laser spot damages a very small, microscopic part of the retina. In the first few days after treatment, you might notice small dark spots in your sight. This will settle and will not cause any noticeable problems.

More serious complications include:

1. This treatment will usually cause some damage to your peripheral vision. Most people will notice that their night vision is reduced.

2. About 1 in 5 patients having PRP will have a reduction of the area of sight (visual field loss). This could lead to loss of the driving licence. If you have had laser treatment for diabetic eye disease, the DVLA might ask you to have special tests (visual field tests) at an accredited optician to determine if you fulfil the visual standards for holding a licence.

3. Rarely, accidental damage to the centre of the retina (macular burn) could lead to severe visual loss. This is very rare, occurring in less than one in a thousand cases.

Important: In some eyes, vision can deteriorate very rapidly due to PDR.

Sometimes, this can happen soon after laser, either because there has not been enough time for the laser to work, or because the laser has been ineffective. This rapid loss of sight is not due to the laser, but to PDR.

How much treatment will I need?

Laser is an outpatient procedure. Laser to control PDR is extensive. About 2000 minute laser burns have to be applied to each eye. Usually, this is done over two or three sessions. After this initial treatment, your eyes will be re-examined. More treatment might be required if the initial treatment does not cause resolution of PDR, or the condition recurs.

Is the treatment Painful?

PRP is not usually painful.

A special contact less is used to focus the laser onto the retina. Before placing this lens on the eye, the doctor will instil some drops of anaesthetic to numb the surface of the eye.