

Argon Laser Treatment for Diabetic Retinopathy

Information for patients

What is diabetic retinopathy?

Diabetic retinopathy is a complication of diabetes, caused by high blood sugar levels damaging the back of the eye (retina).

The retina needs a constant supply of blood, which it receives through a network of tiny blood vessels. Over time, a persistently high blood sugar level can damage these blood vessels in three main stages:

- **Stage 1:** Tiny bulges develop in the blood vessels, which may bleed slightly, but don't affect your vision. This is known as **background retinopathy**.
- **Stage 2:** More severe and widespread changes affect the blood vessels, including more significant bleeding into the eye; this is known as **pre-proliferative retinopathy**.
- **Stage 3:** Scar tissue and new blood vessels, which are weak and bleed easily, develop on the retina; this is known as **proliferative retinopathy** and it can result in some loss of vision.

Sometimes blood vessels in the part of the eye called the macula (the central area of the retina) can also become leaky or blocked; this is called **diabetic maculopathy**.

Both diabetic retinopathy and maculopathy are usually treated with laser treatment when symptoms are affecting your vision.

What is the benefit of laser treatment?

Laser treatment is used to stop your vision getting worse, but it won't usually improve it. There is no cure for diabetic retinopathy or maculopathy. It is likely that without the treatment, you may lose part or all of your sight.

Laser techniques

There are two laser techniques used according to the type of retinopathy:

- **Maculopathy** requires gentle treatment. Serious sight loss can be prevented in 60% to 70% of cases.
- **Proliferative retinopathy** requires extensive laser treatment. Early treatment can prevent severe sight loss in over 90% of cases. In most cases one aim of the treatment will be to minimise the damage to your reading and driving vision.

Laser treatment for maculopathy

Gentle argon laser burns are applied close to the central part of the retina (the most sensitive part of the retina which is used for reading and is responsible for your colour vision). This is called **focal laser treatment**. The burns are designed to seal the leaking blood vessels.

Risks associated with laser treatment for maculopathy

Complications are very rare for maculopathy treatment. Some people may see the laser grid pattern after treatment. This can continue for up to two months and, very occasionally, for up to six months after treatment.

Approximately 1% of patients who have undergone laser treatment might see a small but permanent blind spot close to the centre of their sight. This may have an impact on your ability to drive.

There is a 0.3% chance of a complete loss of central vision after the laser treatment. This would have an impact on your ability to drive; however, without the treatment your vision may become

impaired to the extent that it would interfere with your ability to drive. Please ask advice from your eye doctor.

Accidental laser burns cannot be completely avoided. You may find it difficult to keep still or may accidentally look at the laser as it fires. If the doctor feels that the risk of this happening is too high, then they will stop the treatment. Occasionally, a laser burn to your retina may result in new blood vessels growing that may bleed and cause scarring to your central vision. This, in turn, may result in impairment to your central vision.

Laser treatment for pre-proliferative or proliferative retinopathy

Numerous laser burns are applied to the outer part of your retina (the part of the retina that is used for side and night vision). This treatment is called **argon laser panretinal photocoagulation** (PRP). It is undertaken as an outpatient procedure, so you can go home afterwards.

Risks of laser treatment for pre-proliferative or proliferative retinopathy

At the end of a course of treatment for pre-proliferative or proliferative retinopathy the following may apply:

- Over half of people treated notice some difficulty with their night vision. However, if you are able to meet the DVLA requirements for acuity and visual fields, this may not mean you cannot drive. Please check with your eye doctor for advice.
 - 20% of people treated notice some permanent loss of peripheral vision (outer edge of your sight) in one or both eyes, and 3% of people have to stop driving because of the loss of peripheral vision.
 - Some people have a bleed into the jelly of the eye, consequently noticing 'floaters' in their eye/s (specks, lines or webs moving across their vision); this should settle in a few weeks.
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- If you need an intensive course of laser treatment to control the changes in your eyes, you may notice a temporary worsening of your sight due to the macula (the small, highly sensitive, central area of the retina) becoming waterlogged. This should settle itself, but may require further treatment in a small number of cases.

Laser procedure

The procedure is undertaken in the Outpatient Department and usually takes between 15 and 40 minutes depending on how intensive your treatment is. **Please do not drive yourself to this appointment as you must not drive yourself home afterwards.**

A nurse will check your vision, check if you have any allergies, then administer some drops to dilate your pupil(s). The doctor will explain the procedure and ask for your written consent. Before the laser is applied a numbing local anaesthetic drop is put into your eye(s). A contact lens will be placed on your eye which helps focus the laser and allows the doctor to view the back of your eye in greater detail. **It is very important that you keep your eyes still during the procedure.**

The procedure is usually not painful but sometimes a dull thud sensation or a sharp pricking feeling may be felt. This happens where nerves which the doctor can't see run under the retina.

How will I feel after the procedure?

Your vision may be blurry, but your sight will return to its previous level over the next few hours. Treated eyes can be sensitive to light so you may wish to bring dark glasses to wear when you go home after the treatment. You may be aware of floaters in your vision, but these should settle over a few weeks.

There is usually no need for post-procedure eye drops; if you are using any other eye drops regularly please ensure you inform the doctor who will advise whether you should continue to use them.





If you have any discomfort at home, take painkillers such as paracetamol. You can undertake normal activities the next day including driving.

You will be sent a follow-up appointment.

Please use this space to write any notes or questions you may have.




Further information and advice can be obtained from:

Appointments	 01622 226194
Maidstone Hospital Eye Clinic	 01622 226202
Tunbridge Wells Hospital Eye Clinic (answerphone)	 01892 633877
NHS 111	 111
NHS Choices online	www.nhs.uk

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Telephone:  01622 224960 or  01892 632953

Email: mtw-tr.palsoffice@nhs.net

or visit their office at either Maidstone or Tunbridge Wells Hospital between 9.00am and 5.00pm, Monday to Friday.

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