

Laser treatment for diabetic retinopathy and maculopathy

Introduction

This leaflet contains information that people with diabetic retinopathy commonly ask about laser treatment. It will explain what will happen, what the treatment aims to do, and what risks to be aware of.

There are 2 types of treatment:

- Pan retinal laser treatment for proliferative diabetic retinopathy
- Macula laser treatment for clinically significant maculopathy.

Before you have laser treatment, you will be asked to sign a consent form. It is important that you understand why you are having the treatment.

Why I am being offered laser treatment?

Diabetes can damage the tiny blood vessels at the back of your eye. Laser treatment helps protect your sight and reduce the chance of serious vision loss.

Visit the following website for more information about the changes diabetic retinopathy can cause.

Website: <https://www.nhs.uk/conditions/diabetic-retinopathy/>

What is the aim of the laser treatment?

The aim of the laser treatment is to stabilise the changes caused in your eyes by diabetes and reduce the risk of severe vision loss.

The treatment usually protects your vision rather than improving it, although some people do notice improvement.

What does laser treatment for diabetic eye disease involve?

- Laser treatment is usually performed in an outpatient clinic. It involves you sitting at the laser machine with your chin on a rest for 10 to 30 minutes.
- Your vision will be checked by the nurse and eye drops will be used to dilate (widen) your pupils. Your vision will be blurry for several hours after the drops. **You must not drive to your laser appointment.**
- The doctor will examine your eyes and explain the treatment. You can ask any questions. If you agree to go ahead, you will be asked to sign a consent form before the laser treatment begins.
- It is important to keep as still as possible during the treatment.
- A special contact lens will be gently placed on your eye. This helps the doctor to focus the laser beam on your retina and keep your eye steady. This may feel cool or slightly strange, but it should not be painful. The lens will be removed as soon as the treatment is finished.

- The laser is applied in small spots to the retina. The number of spots depends on how much diabetic damage is present.
- Your eye will adjust to the bright light during treatment, but afterwards your vision may be dark or dazzled for a few minutes. The vision will come back slowly.
- It is **recommended that you bring sunglasses to wear home after the treatment.**

What should I expect after the laser treatment?

Your vision should return to its usual level within a few hours. You can usually return to work and continue your normal activities, including driving, the next day.

If your vision does not return to normal within 24 hours, contact the eye clinic or eye triage line.

If many laser spots were used, your eyes may ache afterwards. Mild painkillers such as paracetamol or ibuprofen usually help.

Will I feel any discomfort?

Usually, the treatment is not painful. Some people feel a sharp pricking sensation when certain areas of the retina are treated. If you feel any discomfort during the treatment, please let your doctor know. They can adjust the laser settings where possible to make the treatment more bearable.

If you have found laser uncomfortable before, taking a mild painkiller an hour before the appointment may help.

What is treatment for proliferative diabetic retinopathy?

If you have, or there is a probability of you having, proliferative diabetic retinopathy (new abnormal blood vessels on the retina), you may need many laser spots to the outer retina. This is called pan retinal photocoagulation (PRP). The outer retina is what allows you to see to the side and in the dark.

Treatment is often delivered over several sessions, with each session lasting around 30 minutes.

Risks of laser treatment for proliferative diabetic retinopathy?

At the end of the treatment, you may experience:

- **Difficulty with night vision.** Over half of people treated notice some difficulty with their night vision.

Reduced peripheral (side) vision. One in five patients notice some loss of peripheral vision in one or both eyes. Three in 100 patients (3%) have to stop driving because their peripheral vision has been reduced.

Your doctor will tell you if your treatment may affect your ability to drive.

If you need an intensive course of laser treatment to control the changes in your eyes you may notice a temporary worsening of your vision. This is due to the macula (small, highly sensitive central area of the retina) becoming waterlogged. This often resolves on its own but may require treatment in a small number of cases. We would tailor your treatment to try to avoid this.

Some people may have a vitreous haemorrhage (a bleed into the jelly of the eye). If you notice a shower of floaters or sudden worsening of vision, contact the eye clinic.

What is the treatment for maculopathy?

If there are changes in the macula (the part responsible for sharp, detailed vision), a gentle laser may be used to reduce leaking and swelling.

The procedure usually takes about 10 minutes.

Types of laser:

- Focal laser – aimed directly at leaking spots
- Grid laser – applied in a small pattern to swollen areas

These tiny laser spots help seal leaks and reduce swelling to protect your central vision.

What are the risks of maculopathy treatment?

Complications are rare. Some people can “see” the laser grid pattern for up to 2 months (occasionally up to 6).

You will be asked to keep your eye as still as possible to ensure the laser is placed safely. If you find it difficult to keep still or accidentally look at the laser when it fires, we will stop the treatment.

Accidental laser burns to the very centre of vision are rare but possible.

The risk of losing your central vision after laser treatment is about 1 in 300 (0.3%).

How successful is laser treatment?

Laser for early proliferative retinopathy prevents severe sight loss in over 90% of cases. In most cases, we will be able to save your reading and driving vision.

Laser for maculopathy prevents serious sight loss in 60 to 70% of cases. Some cases of maculopathy may be treated with injections instead.

What happens if I don't have laser treatment?

Without treatment, you are likely to lose part or all of your sight. The benefits of treatment are much greater than the risks.

Why might laser treatment not work for me?

- The damage to the blood vessels may be too advanced
- Your diabetic eye disease may be progressing too quickly

A special test (fluorescein angiogram) may be needed to plan further treatment

It is very important that you ensure your blood glucose, lipid, and blood pressure (BP) levels have been recently reviewed by your GP or diabetologists. Long-term control of your blood sugar and BP can reduce the risk of progression of your retinopathy and maculopathy.

If laser does not work or bleeding continues, you may need surgery by a vitreoretinal specialist.

If you have any questions after reading this leaflet, please write them down and discuss them with your eye specialist before you agree to treatment.

Contact information

If you would like to speak to someone regarding concerns you may have relating to your eye condition, please contact our Eye Clinic Liaison Officers (ECLO) who will be happy to offer support and guidance.

Eye Clinic Liaison Officers (ECLO)

Email: ghn-tr.eclo@nhs.net

If you have any emergency concerns regarding your eye condition, contact the Ophthalmology triage line to speak to a specialist nurse.

Ophthalmology Triage

Monday to Friday, 8:00am to 1:00pm and 2:00pm to 5.30pm.

Saturday 8:00am to 1:00pm.

Out of hours calls will be diverted to the eye doctor on call.

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Shared Decision Making

If you are asked to make a choice, you may have lots of questions that you want to ask. You may also want to talk over your options with your family or friends. It can help to write a list of the questions you want answered and take it to your appointment.

Ask 3 Questions

To begin with, try to make sure you get the answers to three key questions if you asked to make a choice about your healthcare.

1. What are my options?
2. What are the pros and cons of each option for me?
3. How do I get support to help me make a decision that is right for me?



These resources have been adapted with kind permission from the MAGIC Programme, supported by the Health Foundation.

***Ask 3 Questions** is based on Shepherd HL, et al. Three questions that patients can ask to improve the quality of information physicians give about treatment options: A cross-over trial.

Patient Education and Counselling, 2011;84: 379-85



<https://aqua.nhs.uk/resources/shared-decision-making-case-studies/>



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