



## Medical laser scar treatment Including carbon dioxide (CO<sub>2</sub>) and Pulse Dye Laser (PDL)

This leaflet has been designed to explain why this treatment has been recommended for you, what it involves, and the risks and recovery following the procedure.

### Is laser suitable for my scar or skin lesion?

Lasers can be used to treat scars from many causes including burns and some skin lesions such as vascular lesions. Many patients find laser treatment provides mild to moderate improvement of appearance, colour, texture, itch and tightness. This is not guaranteed, and laser may have limited or no effect. The alternative is scar management through other methods including pressure garments, silicone and massage. All of these can work together alongside laser to improve your scars.

### How does laser work?

A laser is a concentrated beam of light of a specific colour or wavelength. Laser can be used to selectively target and destroy structures within the skin depending on their colour or chemical properties. We currently have two laser machines at Queen Elizabeth Hospital Birmingham (QEHB). The CO<sub>2</sub> laser targets water and the PDL targets red pigment.

The CO<sub>2</sub> laser is usually used in narrow beams (fractions) which create tiny holes in the scar in a grid pattern. This is believed to stimulate collagen to remodel the surface, hopefully producing a less tight feeling and softer scar. The addition of drugs such as steroids may help to increase this effect, and these will be discussed with you beforehand. The CO<sub>2</sub> laser can also be used to smooth surfaces or treat small lumps.

The PDL targets the small blood vessels in your scar, destroying them. This should reduce redness and activity within the scar.

### What will happen on the day?

Laser treatment usually takes place either in Outpatient Clinic Area 4, or in an operating theatre. For treatments in Outpatient Clinic Area 4, you will attend a consultant clinic. You will be escorted to the laser room where you will be given the opportunity to ask questions and clarify anything that you are unsure about. You will be asked to sign a consent form and assessed by the member of the team who will deliver laser treatment. Everybody in the room wears special goggles throughout the duration of the procedure and the doors must be kept locked to avoid anyone

walking in. This is because all medical lasers could severely damage the eyes if directed at them. The treatment will usually take less than 20 minutes, and you will be able to leave shortly afterwards.

If you are having treatment in an operating theatre, you will be asked to come to the Ambulatory Care Unit (ACU) on the ground floor (Level 0) at QEHB. You will be seen beforehand by a member of the team who will check which areas you are having treated. You will be given a chance to ask any further questions and asked to sign a consent form. You will be asked to confirm your details several times as part of our routine checks. You will change into a gown and local anaesthetic cream will be applied. Please be prepared to wait for a few hours as there are many patients on the same procedure list, and you may be towards the end of the list. To make the list as efficient as possible, we ask all patients to arrive before it starts. When it is your turn, you will be escorted to the operating theatre, and the team will make you comfortable and recheck your details. You will be given goggles to wear throughout the duration of the procedure, and the doors will be kept locked to avoid anyone walking in. The procedure itself will usually take less than 20 minutes.

## **What anaesthetic will I have?**

We do not routinely offer anaesthetic cream or injection for PDL because it is not usually necessary. For CO<sub>2</sub> laser, smaller scars are commonly managed with local anaesthetic cream which is applied an hour or more before your treatment. Sometimes we provide this beforehand and you will receive instructions about how to apply it. For larger areas, or when it is particularly painful, we inject the area with local anaesthetic (LA). Patients with big areas to treat occasionally require a general anaesthetic (GA) (be put to sleep). This will be discussed with you beforehand.

## **Will it hurt?**

Each pulse of laser light from the PDL feels like a flick of an elastic band with a cool spray afterwards. Most patients do not find it too uncomfortable at the time. Some discomfort and soreness is expected afterwards and we recommend that you take regular painkillers such as paracetamol or ibuprofen afterwards.

The CO<sub>2</sub> can be more uncomfortable, which is why this is usually provided with LA. Depending on the settings used and the age of the scar, some patients can feel the pulses like sharp bursts of discomfort. We are always there speaking to you and can adjust the settings on the laser so they are more comfortable for you, although they may be less effective. You can stop the treatment at any time. After we have treated an area, we cool it with cold compresses and ice packs which helps the discomfort. Again, we recommend that you take simple painkillers afterwards.

## **Can I eat and drink?**

Most patients have the procedure under LA (cream/injections) so can eat and drink beforehand. If you are having a GA, you will have fasting instructions (nil by mouth).

## **What will the area look like after the procedure?**

It is common for the treated area to look red and inflamed after the procedure. There may be the appearance of small purple bruises following PDL treatment, which fade in 1-2 weeks. After this time there may be brown discolouration which usually fades after several months. After CO<sub>2</sub> laser treatment, there may be some pale straw colour fluid which leaks from the treated skin for days afterwards. This is normal, and we advise you to follow the after-care instructions below.

## **What can I do to prepare for the laser procedure?**

- Avoid getting a tan (including fake tan) for six weeks before your procedure by using sunblock on exposed areas, as this will increase the risk of uneven pigmentation.
- If you are on medications, please bring a full list to your appointment.
- For face laser, please stop retinoid products two weeks prior to your procedure.
- Do not wear makeup on the area to be treated.
- Please advise on the day of the procedure if you have a history of herpes or cold sores as you may require treatment to prevent reactivation following your laser.
- If you have unstable scars or unhealed wounds, we do not laser them directly and we may advise you to wash with a topical antimicrobial wash (such as chlorhexidine) for two days before your procedure.
- Take your usual medications on the day of the procedure.

## **What should I do after my laser procedure?**

### **For all lasers**

- For best results, carefully follow the instructions given to you on the day of procedure.
- Simple painkillers such as paracetamol or ibuprofen may be required for several days.
- Do not scratch or pick at the treated area.
- Wear pressure garments once you are comfortable.
- Avoid swimming or excessive exercise or hot environments for two weeks after the procedure.
- Your skin will be more sensitive to the sun where you have had laser treatment, so use sunscreen that provides a protection level of SPF 50 or cover up the area to prevent sun burn and pigment changes for at least one year afterwards.
- It is important that the area does not dry out or fluid forming a crust as this may lead to infection.
- If the skin becomes encrusted or you are concerned about infection (excess fluid from the site, it feels warm or looks very red or you have a fever), please contact us.

### **CO<sub>2</sub> laser specific aftercare**

- Expect the treated area to look red and be sensitive for up to six weeks.
- If dressings have been applied to the area, remove these at 24 hours, or when instructed by your specialist.
- After this, or in the evening if a dressing was not applied, wash the area gently once a day with a mild antiseptic washing lotion (such as Dermol 500) and apply non-perfumed moisturising cream four times daily until there is no leaking or crusting.

- After facial treatments, wash gently twice a day with a non-perfumed foaming facial cleanser (such as Cetaphil) and apply non perfumed moisturiser four times each day for two weeks.

**PDL specific aftercare**

- Continue with your usual wash and moisturiser regime.

**Are there any risks?**

- The risks of laser treatment are very low but do exist. Read this carefully and ask if you have any further questions.
- There will be some pain afterwards, but this is usually treatable with simple painkillers such as paracetamol or ibuprofen (please always read the label).
- Some people notice no difference and are unsatisfied with the outcome. Most people require several episodes of treatment before they see a difference.
- Colour change: there is a risk of permanent increased or decreased pigmentation to the skin, following laser treatment. If you are concerned about this, a smaller “test patch” will be carried out first.
- Eye damage: special glasses are used to protect your eyes during the procedure and must be always worn to prevent permanent damage to the eyes.
- Infection: rarely, an infection occurs (see above for signs). If you have concerns and think your laser site may be infected, please contact us.
- Wound breakdown: this is rare but may occur following any laser procedure. If you have wounds forming where you have had laser, contact us. If this happens you may have scars that are lumpy or raised.

**Contact details**

For any non-urgent concerns contact the Burns secretaries on 0121 371 4953. In an emergency attend an Emergency Department (A&E), or please contact your GP who can contact the on-call Burns team.

Please use the space below to write down any questions you may have and bring this with you to your next appointment.

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## Burns and plastic surgery

Queen Elizabeth Hospital Birmingham  
Mindelsohn Way, Edgbaston  
Birmingham, B15 2GW  
Telephone: 0121 371 2000

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