

Laser treatment for damage to the lower (lumbar) spine causing severe pain

NICE 'HealthTech guidance' advises the NHS on when and how new procedures can be used in clinical practice.

This leaflet is about when and how laser treatment can be used in the NHS to treat people with damage to the lower (lumbar) spine causing severe back pain. It explains guidance (advice) from NICE (the National Institute for Health and Clinical Excellence).

This HealthTech guidance makes recommendations on the safety of a procedure and how well it works. An interventional procedure is a test, treatment or surgery that involves a cut or puncture of the skin, or an endoscope to look inside the body, or energy sources such as X-rays, heat or ultrasound. The guidance does not cover whether or not the NHS should fund a procedure. Decisions about funding are taken by local NHS bodies (primary care trusts and hospital trusts) after considering how well the procedure works and whether it represents value for money for the NHS.

This leaflet is written to help people who have been offered this procedure to decide whether to agree (consent) to it or not. It does not describe damage to the lumbar spine causing severe back pain or the procedure in detail – a member of your healthcare team should also give you full information and advice about these. The leaflet includes some questions you may want to ask your doctor to help you reach a decision. Some sources of further information and support are on page 6.

What has NICE said?

Current evidence on the safety and efficacy of laser treatment for damage to the lumbar spine is adequate to support the use of this procedure provided that normal arrangements are in place for clinical governance, consent and audit.

Patients selected for the procedure should only be those who have severe lower back or leg pain that has not responded to nonsurgical treatment and in whom scans have shown that they have bulging of an intact disc. The patients should not have nerve or spinal disc damage that needs surgery.

This procedure may not be the only possible treatment for a damaged disc in the lumbar spine. Your healthcare team should talk to you about whether it is suitable for you and about any other treatment options available.

Laser treatment for damage to the lumbar spine

The medical name for this procedure is 'percutaneous intradiscal laser ablation in the lumbar spine'.

The procedure is not described in detail here – please talk to your specialist for a full description.

The spine is made up of small bones called vertebrae that are separated by tough discs that sit between the bones and act like cushions. Sometimes discs can become damaged causing the inner part of the disc to bulge (called a protrusion). The bulging disc may press on one or more of the spinal roots causing back or leg pain and sometimes leg numbness and weakness.

Treatments for a bulging lumbar disc include rest, painkillers and physiotherapy. People with nerve damage or severe symptoms that do not improve sometimes need surgery. Surgery may involve removal of part of the disc through a small incision (called microdiscectomy).

In this procedure the disc is treated using laser energy. The patient is sedated and given a local anaesthetic. A needle is inserted into the affected disc, and X-ray and video imaging are used to help find the correct position. A thin tube, through which the laser energy is delivered, is then passed through the needle into the disc. The laser is then used to shrink the bulging disc.

What does this mean for me?

NICE has said that this procedure is safe enough and works well enough for use in the NHS. If your doctor thinks laser treatment in the lumbar spine is a suitable treatment option for you, he or she should still make sure you understand the benefits and risks before asking you to agree to it.

You may want to ask the questions below

- What does the procedure involve?
- What are the benefits I might get?
- How good are my chances of getting those benefits? Could having the procedure make me feel worse?
- Are there alternative procedures?
- What are the risks of the procedure?
- Are the risks minor or serious? How likely are they to happen?
- What care will I need after the procedure?
- What happens if something goes wrong?
- What may happen if I don't have the procedure?

You might decide to have this procedure, to have a different procedure, or not to have a procedure at all.

Summary of possible benefits and risks

Some of the benefits and risks seen in the studies considered by NICE are briefly described below. NICE looked at 10 studies on this procedure.

How well does the procedure work?

One study reported 'excellent' or 'good' results for pain relief and improved movement in 419 out of 500 patients (84%) who had laser treatment and 428 out of 500 patients (86%) who had surgery (microdiscectomy) at their 2-year check. Another study reported 'excellent' results for pain relief and improved movement in 29 out of 60 patients (48%) who had laser treatment and 22 out of 46 patients (48%) who had a procedure that uses an automated device to remove part of the disc through a small cut in the patient's skin (automated percutaneous lumbar discectomy).

A study of 518 patients reported a success rate of 75%, and a study of 576 patients reported that 61% of patients were satisfied with the results of laser treatment.

The study of 1000 patients reported that, at their 2-year check, 16 out of 500 patients needed a further operation for disc problems (herniation) or continued leg or back pain after laser treatment, compared with 35 out of 500 patients after microdiscectomy surgery.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that the main success factors of the procedure are a reduction in the recurrence rate and the need to reoperate, improved pain and disability scores, and successful relief of compressed nerves.

Risks and possible problems

Painful inflammation of the disc, not caused by infection (aseptic discitis), was reported in 8 patients out of 1156 who had laser treatment in 3 studies. Of these, 2 patients needed steroid treatment in hospital for up to 3 days and 2 were treated with bed rest and painkillers.

Inflammation of the disc caused by infection (septic discitis) was reported in 2 patients in the study of 518 patients. Both were treated with antibiotics for 6 weeks.

In one study, a type of bone damage (called osteonecrosis) in the vertebrae was reported in 4 out of 182 patients. One of these patients needed surgery for back pain, which was better a year after the initial laser procedure, and 3 had less invasive treatment which had reduced the pain 2 years after the initial procedure.

One study looked at 10 patients who needed further operations after the laser procedure. It reported that after the laser procedure, all of the patients had heat damage to their spines (called heat-induced cell necrosis) and bulging masses compressing and sticking to nerve roots.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that bowel perforation had been described in some studies. In theory, other problems may include tearing of the tissue that covers the spinal cord, heat damage, recurrence of the bulging disc, nerve damage, infection, collapse of the vertebrae, reduction in the height of the disc and scarring around the nerves.

More information about damaged lumbar discs

NHS Choices (www.nhs.uk) may be a good place to find out more. Your local patient advice and liaison service (usually known as PALS) may also be able to give you further information and support. For details of all NICE guidance on damaged lumbar discs, visit our website at www.nice.org.uk

About NICE

NICE produces guidance (advice) for the NHS about preventing, diagnosing and treating different medical conditions. The guidance is written by independent experts including healthcare professionals and people representing patients and carers. They consider how well an interventional procedure works and how safe it is, and ask the opinions of expert advisers. This guidance applies to the whole of the NHS in England, Wales, Scotland and Northern Ireland. Staff working in the NHS are expected to follow this guidance.

To find out more about NICE, its work and how it reaches decisions, see www.nice.org.uk/aboutguidance

This leaflet is about 'percutaneous intradiscal laser ablation in the lumbar spine'. This leaflet and the full guidance aimed at healthcare professionals are available at www.nice.org.uk/guidance/HTG230

You can order printed copies of this leaflet from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N2298). The NICE website has a screen reader service called Browsealoud, which allows you to listen to our guidance. Click on the Browsealoud logo on the NICE website to use this service.

We encourage voluntary organisations, NHS organisations and clinicians to use text from this booklet in their own information about this procedure.

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