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## **Automated percutaneous mechanical lumbar discectomy**

Understanding NICE guidance –  
information for people considering  
the procedure, and for the public



## Ordering information

You can download the following documents from [www.nice.org.uk/IPG141](http://www.nice.org.uk/IPG141)

- this booklet
- the full guidance on this procedure.

For printed copies of the full guidance or information for the public, phone the NHS Response Line on 0870 1555 455 and quote:

- N0929 (full guidance)
- N0930 (information for the public).

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## About this information

The National Institute for Health and Clinical Excellence (NICE) is the independent organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health. One of NICE's roles is to produce guidance (recommendations) on whether interventional procedures are safe enough and work well enough to be used routinely in the NHS in England, Wales and Scotland.

This information describes the guidance that NICE has issued on a procedure called automated percutaneous mechanical lumbar discectomy. It is not a complete description of what is involved in the procedure – the patient's healthcare team should describe it in detail.

NICE has looked at whether automated percutaneous mechanical lumbar discectomy is safe enough and works well enough for it to be used routinely for the treatment of sciatica (which is sometimes called lumbar radicular pain).

To produce this guidance, NICE has:

- looked at the results of studies on the safety of automated percutaneous mechanical lumbar discectomy and how well it works
- asked experts for their opinions
- asked the views of the organisations that speak for the healthcare professionals and the patients and carers who will be affected by this guidance.

This guidance is part of NICE's work on 'interventional procedures' (see 'Further information' on page 10).

## About the procedure

When a person has sciatica, there is pain in the lower back and down the leg. It happens when one of the spongy cushions or discs that sits between the small bones in the lower part of the backbone has slipped (a 'slipped disc'). The discs in the backbone have a tough outer ring and a soft jelly-like inside. When a disc 'slips' (or herniates), the tough outer ring of the disc tears and the jelly-like middle bulges out through the tear. This bulge can press on nearby nerves causing pain, numbness and changes in sensation. In sciatica, the slipped disc presses on the sciatic nerve, which goes to the buttock, the back of the thigh, the calf and the foot.

People with sciatica may be offered painkillers, anti-inflammatory medicines, exercises, or steroid injections. Hot and cold compresses on the area may also help. If these don't help or if the slipped disc is really squashing the nerve, surgery may be an option. The standard operation, called an open discectomy, involves making an opening in the skin and removing the part of the disc that's bulging out. This can also be done using what are known as 'minimally invasive' methods, where the doctor carries out the operation through a small opening in the back using special equipment. This procedure is called a microdiscectomy.

The new procedure NICE has looked at uses an automated device to cut and remove the part of the disc that's bulging out and pressing on the nerve. The patient has a local anaesthetic. A narrow tube called a cannula is inserted into the slipped disc through a small opening made in the patient's skin. The doctor uses X-ray images to make sure he or she has the cannula in the right position. The automated device is then placed through the tube into the disc. It is used to remove the jelly-like inside of the slipped disc.

## How well the procedure works

### What the studies said

In a study that compared people who had the new procedure with people who had the microdiscectomy procedure, the new procedure using the automated device was successful in 9 out of 31 patients (29%; this means 29 people out of 100). The figure for the people who had the microdiscectomy was much higher – this procedure was successful in 32 out of 40 people (80%).

Another study compared people who had the new procedure with people who had the standard open discectomy. Seven out of 17 patients (41%) had an 'excellent' or 'good' result after having an automated percutaneous lumbar discectomy, compared with 4 out of 10 (40%) of the patients who'd had a open discectomy.

A third study compared automated percutaneous lumbar discectomy with another procedure called chemonucleolysis. In chemonucleolysis, a protein called an enzyme is injected into the slipped disc. This enzyme helps to break down the jelly-like middle part of the disc so that it doesn't press on the nerves. In this study, more patients had a successful result after chemonucleolysis than after automated percutaneous lumbar discectomy. The numbers of patients with successful results were 44 out of 72 patients (61%) who had chemonucleolysis and 30 out of 69 patients (44%) who had the automated procedure.

In two studies that followed what happened in large numbers of people who had automated percutaneous lumbar discectomy, 707 out of 1047 patients (68%) had an 'excellent' or 'good' result when they were checked 6 months after having the new procedure and 1216 out of 1474 patients (82%) had an 'excellent' or 'good' result 1 year afterwards. A third study checked on patients nearly 5 years after the procedure and found that it had been successful in

52 out of 115 of the people who'd had it (45%). In another study, 47 out of 50 patients (94%) were satisfied with the results of their surgery 6 months later. And in another study 95 out of 182 patients (52%) were satisfied with the results when they were asked about it around 2½ years later.

### What the experts said

The experts said that it was not clear from the results of the studies how well the new procedure worked.

## Risks and possible problems with the procedure

### What the studies said

Not many people in the studies had problems after having automated percutaneous lumbar discectomy. A small number of people developed discitis, which is inflammation in the disc (this affected 2 out of 1146 people in one study and 2 out of 182 people in another). One patient out of 1146 people in one study and 1 out of 69 people in another study developed a blood-filled swelling called a haematoma. Other problems that affected small numbers of people were spasms in the back muscle, small amounts of bleeding, small amounts of damage to the nerve, and feeling faint.

### What the experts said

The experts said that it was possible that the blood vessels or nerves could be damaged in this procedure. Discitis and infection in the disc were also possible.

## What has NICE decided?

NICE has decided that, if a doctor wants to carry out automated percutaneous lumbar discectomy, he or she should make sure that the patient understands what is involved and that there are still uncertainties over how well the procedure works. There should be special arrangements in place so that the patient only agrees (consents) to the procedure after this discussion has taken place.

## What the decision means for you

Your doctor may have offered you automated percutaneous lumbar discectomy. NICE has considered this procedure because it is relatively new. NICE has decided that there are uncertainties about the benefits of automated percutaneous lumbar discectomy which you need to understand before you agree to it. Your doctor should discuss these uncertainties with you. Some of these may be described above.

## Further information

You have the right to be fully informed and to share in decision-making about the treatment you receive. You may want to discuss this guidance with the doctors and nurses looking after you.

The NICE website ([www.nice.org.uk](http://www.nice.org.uk)) has further information about NICE, the Interventional Procedures Programme and the full guidance on automated percutaneous lumbar discectomy that has been issued to the NHS. The evidence that NICE considered in developing this guidance is also available from the NICE website.

If you have access to the internet, you can find more information on sciatica on the NHS Direct website ([www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk)).

You can also phone NHS Direct on 0845 46 47.



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