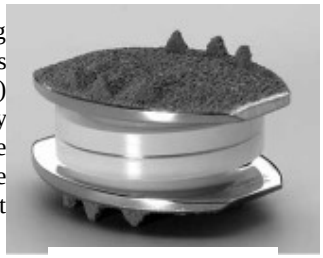
Lumbar Disc Replacement **Patient Information**

Why Replace A Disc?
Most joints in the body have been affected by a variety of disease processes and have been treated by fusion in the early days of surgery and more recently by replacing the joint with an artificial one. Whilst the spinal discs are not joints in the technical sense, they do allow a degree of movement which, when all discs are taken together, confers a considerable degree of flexibility on the spine as a whole.

When a disc is damaged it may lead to pain or abnormal movement, both of which may need correction. If the discs degenerate, through the ageing processes, trauma or repeated stress, to the extent that they become increasingly painful, the person may become symptomatic. This is typically a central back pain, which may spread to the legs, or even into the abdomen.

Standard treatments for this type of pain include rest, during an acute exacerbation, with anti-inflammatory medication, followed by physiotherapy. Blocks, such as epidurals may help. In most instances the pain will resolve adequately, but when these symptoms do not resolve after conservative treatment, the patient may feel that they are bad enough to warrant surgery.

What is an Artificial Disc?
An artificial disc is a three-piece medical device consisting of a sliding core sandwiched between two coated metal endplates. The sliding core is made from a medical grade plastic (high molecular weight polyethylene) and the endplates are made from medical grade cobalt chromium alloy with a porous coating to promote anchorage, by the in-growth of bone into the pores. These materials usually do not harm the body and are used in many other medical implants such as total knee replacement implants.



The Charite Disc

What are the benefits of disc replacement surgery?
There are potential benefits of disc replacement surgery over spinal fusion surgery. Laboratory testing shows that artificial discs design allow your spine to move. In the clinical study, patients were observed to have motion between 0 and 21 degrees in flexion/extension (bending forwards and backwards). When a fusion surgery is performed, although your pain symptoms may go away, the vertebrae surrounding the disc space are immobilized. This may put more strain on the next disc, causing it to become damaged or even painful.

Before surgery
You will be admitted to the London Clinic, almost always in the morning on the day of surgery. You should attend the 20 Devonshire Place entrance, where you will be shown to the admissions office. After any outstanding paperwork has been completed, you will be escorted to your room, usually on the Spinal Surgery Unit on the 6th floor. Here the nursing staff will meet you and take you through the events of the day. Blood tests will be taken, including a cross-match to allow a blood transfusion, if this is absolutely necessary, during or after your surgery. X-rays may need to be taken (one floor up) and an ECG, cardiograph, may be performed, by the cardiac technician, who will come to your room.

You will meet the hospital physiotherapist, who will explain how your mobility will be managed after surgery and will teach you some simple exercises to do in the early post-operative period. This physio will be the person who, the day after the surgery, will help you to get out of bed and start walking. You will meet the anaesthetist, who will ask you about your previous medical history, in particular any issues you have had with previous anaesthetics and will need to know about any dentures or caps or crowns on your teeth. These may be at risk as the breathing tube is put down once you are anaesthetised, if they are not known about in advance.

The surgeon will then see you, to go through the consent form, which you should be familiar with, in terms of knowing the potential risks and complications of the impending surgery. Ask any questions you want, to make sure you are 100% happy that you are doing the right thing. This is a major operation. After you have signed the consent form, if you wish, you may have a pre-med (mild sedative drug, to relax you) if you are feeling nervous. This is normal!

How is it done? / What happens during the surgery?
The operation is performed under a general anaesthetic, with you lying on your back. A horizontal incision is made, usually below the belly button and the muscles are gently pulled to either side, to allow access. It is unusual for the muscles to be cut at this stage, so recovery of function can be expected. The spine is approached through the retroperitoneal space, the peritoneum being the sac containing the bowel. Once in this space, the blood vessels are carefully moved away so that the spine can be seen and the damaged disc can now be removed.

The disc replacement is inserted after distraction of the disc space (spreading it to restore its normal height) and the wound is then closed. X-rays are used during the operation to make sure the artificial disc is in the right position.

What should I expect after surgery?
After the operation, you will wake up in the recovery ward outside the theatre suite. Once fully awake you will be taken, on the same bed, to the intensive care area, where you will stay overnight. This is known as the PCU ("Progressive Care Unit") on the third floor of the hospital. Your immediate family can visit you, if you wish, once you are there. It is a busy unit, with lots going on, but do not be put off by all the monitors and machines. They are there to help. The anaesthetist will prescribe medicines to control pain and nausea. You should be transferred back to your ward room the following morning and most patients are out of bed with the help of the nursing and physiotherapy staff the day after surgery and out of hospital two to five days later. This will depend on the home circumstances as well as a variety of other factors. Exercises commence gently on the first post-operative day. Before you leave the physio will want to be sure that you are safe and confident going up and down stairs and can walk the corridors comfortably.

Travelling home
This may be problematic, if the distances are great, or there is no one to help. You must not drive or travel on public transport on your own. If someone can pick you up, you should recline the seat, to take the weight off the spine or lie across the back seat, supported by pillows. Always be prepared to break the journey up into short (half-hour) periods, by stopping and getting out to stretch. Have your painkillers to hand, if required. A better alternative may be to book an ambulance, especially for longer journeys. These, however, may be expensive and are often not covered by medical insurance companies. The nurses on the ward can organise this for you, usually needing only a few hours notice.

The first few weeks are painful and can be a difficult time. You will need a lot of help and a lot of rest once you are home. Simple tasks will seem awkward and may be painful. You should plan to lie down regularly during the day and take the prescribed painkillers as needed. Do not try to get back to work too early, as you will simply aggravate your pain and your co-workers! Pace yourself in everything. Eat small regular meals and take gentle regular exercise, walking only in the first three weeks. The rehabilitation team from the London Spine Clinic will advise you regarding the speed at which you should increase your exercises. It is vital to avoid extension of the spine (bending backwards) during the first six weeks after disc replacement, as this may open up the disc space and cause the prosthetic disc to move. Activities such as lifting, bending, sexual activity, housework, may all need to be modified, both in terms of the amount you do and how you do it. Talk to your physio, either in the hospital or at the London Spine Clinic about this and any other concerns you have regarding your physical abilities in this recovery phase.

Follow-up
An outpatient clinic visit will be scheduled for six weeks (roughly) post-operatively. X-rays are taken before you see your surgeon. This visit may be the first time you travel after your operation, so, again, pace yourself. Leave plenty of time, break up the journey if it is a long one (more than one hour) and have medication with you to take if things start to hurt. It is better not to drive yourself and to have someone with you. If the x-rays look good, the disc is healing well into place and you are feeling better, you will be able to rapidly step up your rehabilitation thereafter. Your surgeon will see you again at three, six and twelve months after surgery, usually with x-rays beforehand.

Most people are fit to return to gentle activities including non-manual labour, within three to four weeks. Those employed in heavy manual labour should plan to be off work for a minimum of six weeks and may need to consider re-training in a less physically demanding job.

What possible complications could occur?

Risk	Cause	% Risk (note figures vary)
Death	Bleeding, drug reactions	None recorded
Nerve Injury/Paralysis	Damage to the nerve whilst removing disc/bone or inserting the disc	<1
Fluid Leak	Small tear in the nerve sheath allowing leakage of cerebrospinal fluid	<1 (but higher if previous surgery)
Infection	Contamination during surgery, rarely, late infection via the blood; abscesses on the skin, toe nails, etc	Approx 1
Haemorrhage requiring transfusion	Injury to the blood vessels in front of the spine	<1
Back Pain	Some patients will develop back pain due to the stretching of the spine	Transient and dependant upon fitness
Leg Pain	If your disc was very narrowed or there has been previous surgery the scarring may tether the nerves, which may be stretched by the surgery	1-2 with previous posterior surgery
Bowel Injury	Bowel is retracted during surgery	<1
Bladder/ Ureter injury	Structures are retracted during surgery	<1
Impotence	Retraction or injury to a small nerve in front of the spine leads to retrograde ejaculation in men	Approx 1 with the retro-peritoneal approach
Warm leg	The sympathetic nerve runs alongside the lumbar discs. If damaged the left leg (usually) will fell warmer for some months after the operation	1-5 (but higher if previous surgery)
Wound pain	The incision	All to some extent
Hernia	Weakness in the sheath covering the muscles as a result of surgery	<1
Need for further surgery	If the motion at the disc is too great the joints may hurt; if another disc gives way; if the device moves	<1

Contact your Surgeon or General Practitioner or attend A and E immediately after surgery if:

- You get a fever
- The wound starts leaking fluid
- You have trouble swallowing or breathing
- You have trouble urinating
- You have new or increased back or leg pain or numbness

Contact

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