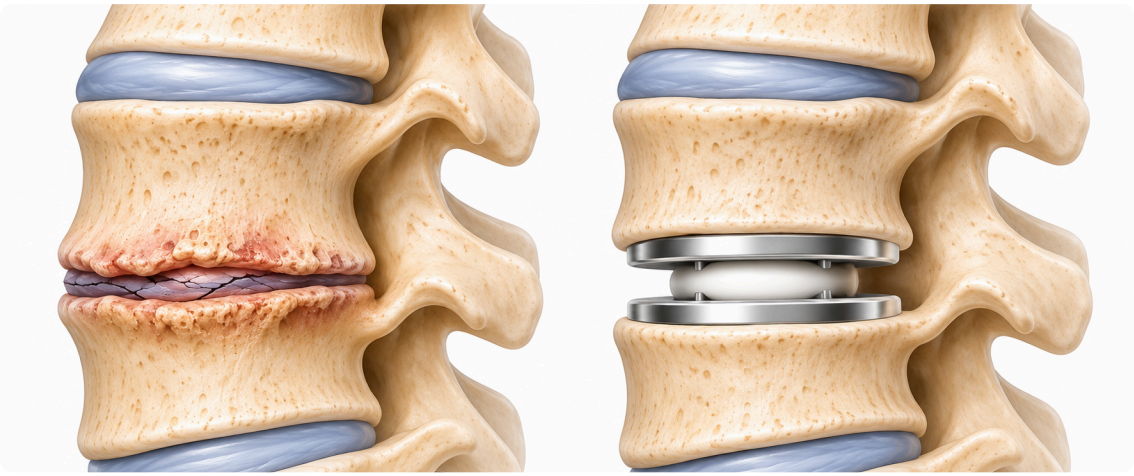
PATIENT INFORMATION

Lumbar disc replacement

The condition · The operation · The risks



You have been offered a lumbar disc replacement. This leaflet explains in simple terms **what a worn disc is, how the operation is carried out and what its risks are**. It adds to your consultation but does not replace it: write down your questions and we will go through them together. Take the time to think before you decide.

Surgery is not a first-line treatment. It is only offered **when a well-conducted non-surgical treatment has failed** (physiotherapy, medication, adapted physical activity, sometimes injections) over **at least 6 months**[1].

CHAPTER 1

1 What is degenerative disc disease?

Between two vertebrae lies a **disc**, made of a soft central core surrounded by a strong fibrous ring. It allows the spine to bend and turn, and it **absorbs shocks**. In the lower back, the discs carry the heaviest loads. The disc most often affected is **L4-L5**, but a prosthesis can be placed from L2-L3 down to L5-S1.

Why does the disc hurt?

Over time, the disc dries out, flattens and cracks. In some people, this damaged disc itself becomes painful:

- **cracks in the ring**, into which small nerve endings grow;
- **inflammation of the bone** of the neighbouring vertebrae, visible on MRI (“Modic changes”);
- **abnormal movement** between the two vertebrae.

This is called **discogenic low back pain**.

Is it common?

Yes, very. Disc wear is part of normal ageing: it is seen on MRI in **about 1 in 3 people at age 20**, and in almost everyone by age 80, even without any pain[2]. Seeing a worn disc on an MRI therefore does not prove that it is causing your pain: that is the whole purpose of the assessment.

Possible symptoms

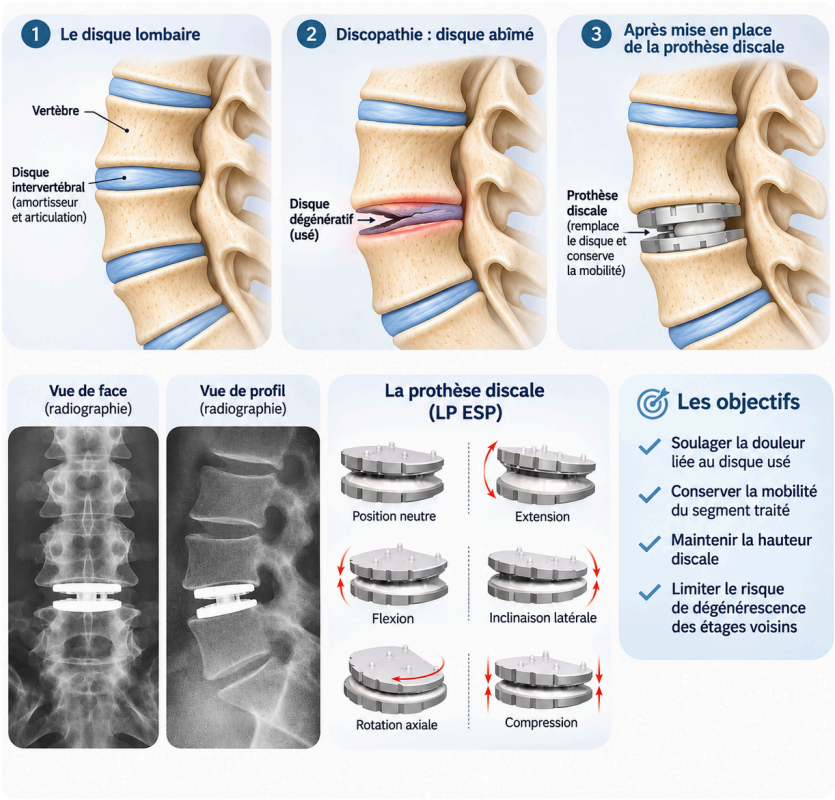
Type	What you may feel
Pain	Lower back, “like a bar” across the back, sometimes spreading to the buttocks or upper thighs
Pattern	Worse when sitting for a long time, bending forward or carrying loads; eased by changing position or lying down
Impact	Difficulty sitting, working, sleeping
Leg pain	Possible in addition to back pain: it is caused by irritation of a nerve close to the diseased disc. However, **without back pain**, a disc replacement is probably not the right treatment.
The most favourable situation	**Long-standing lower back pain, linked to movement, coming from a single damaged disc**, while the neighbouring discs are healthy. This is where a disc replacement gives the best results.

Before offering surgery, we check that the disc really is the cause of your pain. Tests: **lumbar MRI** (always required), **standing X-rays** and a **bone density scan** (always) to check the strength of your bones.

The decision to operate rests mainly on **the impact of your pain on your quality of life**, not only on the test results.

Disc replacement or fusion?

Two operations are possible for a painful disc. **Fusion** welds the two vertebrae together and removes movement. A **disc replacement** replaces the disc and **preserves movement**; it may also put less strain on the neighbouring discs. The prosthesis we use (**LP-ESP**) is made of two titanium plates joined by a soft cushion, which reproduces the shock absorption and movements of a natural disc[3].



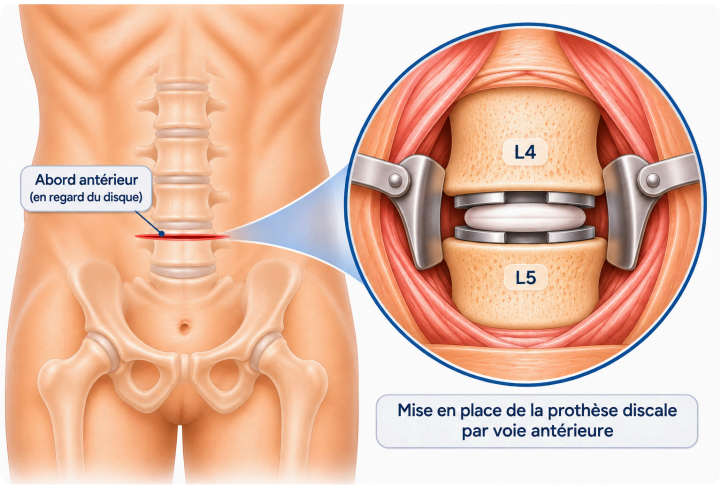
The lumbar disc, the damaged disc, then the LP-ESP prosthesis and its movements.

CHAPTER 2

2 The operation

The damaged disc is removed and replaced by the prosthesis. The operation is done **through the abdomen**: the disc is reached from the front, **without touching the back muscles or the nerves**, which allows a quick recovery.

> **Your safety:** I perform this approach myself. A **vascular surgeon is always present in the hospital** and can step in immediately if needed.



The incision is made low on the abdomen; the prosthesis is placed between the two vertebrae, here L4 and L5.

How the operation is carried out (1 to 2 hours)

Step	What happens
1	**General anaesthesia.** You lie on your back.
2	**Horizontal incision low on the abdomen**, at the level of the underwear line, centred on the midline for cosmetic reasons.
3	The surgeon goes **behind the lining of the abdomen (the peritoneum), without opening it**, and gently moves aside the intestines, the ureter and the large blood vessels (aorta, vena cava, iliac vessels) that run in front of the spine.
4	The level to be operated on is **identified by X-ray** during the operation.
5	The damaged disc is **removed completely** and the space between the vertebrae is prepared.
6	The **LP-ESP prosthesis** is inserted; its position is checked by X-ray.
7	The blood vessels and organs return to their place. The abdominal wall and the skin are **closed**, without a drain.

After the operation

When	What happens
Day of surgery	About 1 hour in the recovery room, then back to your room. **You get up for the first time 3 hours after the operation**, wearing the brace. A urinary catheter is rarely needed.
Day 1 – Day 2	**Discharge** from hospital, usually **within 48 hours**. A treatment to prevent blood clots is prescribed if needed, depending on your medical history.
Up to 1 month	**Brace** worn from the morning (after your shower) until bedtime; it can be removed for a nap and is not worn at night. **No driving.** Walk every day. No carrying heavy loads.

When	What happens
1 month	**Follow-up X-rays** (always), to be **sent to us by e-mail**. Start of **physiotherapy sessions**.
2 months	**Standing lumbar X-ray** and **follow-up consultation**, by video call or in person depending on how far away you live: we review your initial goals and, if needed, step up your rehabilitation.
3 to 6 months	Return to **work** and **sport**, depending on your job, your activities and your recovery.
6 months	**New consultation and new X-rays**: we review your progress again.
After that	**No routine consultation** if your recovery is normal. Long-term follow-up depends on how any remaining pain evolves.

You play an active part in your recovery. Surgery is **an important step** in your treatment, but it is not the only one. **Following the protocol** after the operation (brace, walking, physiotherapy, check-ups) and **taking an active part** in your rehabilitation clearly increase the chances of success.

A gradual recovery. In the first weeks, your abdomen may feel a little bloated, your bowels may be slower and your back may still be sore: this is normal and it settles. The goal is an **improvement of about half at 2 months** and **at least 70% at 6 months**, and progress usually continues **for up to 2 years** after the operation.

♥ Intimate life · Fertility · Pregnancy

- **Sexual activity:** wait until **the skin has fully healed** before resuming. After that, there is no contraindication: simply choose positions that are not painful.
- **Fertility (men):** there is a rare risk of retrograde ejaculation (see chapter 3). If you plan to have children, even in the distant future, consider **sperm banking before the operation**, available at a specialised centre (CECOS in France). The decision is yours: let's talk about it together.
- **Pregnancy:** it is perfectly possible after a disc replacement, and an **epidural** is not contraindicated. If you have previously had lower back surgery from behind, discuss it with the anaesthetist who will perform the epidural.



Example: on the left, the MRI before the operation (healthy discs are white; the damaged disc, at the bottom, is dark and flattened); on the right, the side-view X-ray with the prosthesis in place.

CHAPTER 3

3 The risks of the operation

Every operation carries risks, even when it is carried out well. For disc replacement, **complications are uncommon**. They are most often **temporary** and heal without after-effects; serious and permanent complications are rare. Above all, **more than 9 patients out of 10 are relieved** by the operation.

Risks common to all surgery

Risk	Frequency	In practice
Anaesthesia	—	Its specific risks are explained to you by the anaesthetist at your consultation.
Infection	≈ 1 to 1.5%[4,5]	Usually superficial, at the scar: local care and antibiotics. More rarely deep, it may require cleaning in the operating theatre.
Haematoma	Rare	A collection of blood at the operation site, which usually clears on its own. Rarely, a further operation is needed.
Blood clot in a vein (DVT), pulmonary embolism	≈ 1%[9]	Prevented by getting up early and, depending on your medical history, by anticoagulant treatment. Pulmonary embolism is rarer.

Risks related to the approach through the abdomen

Risk	Frequency	In practice
Injury to a blood vessel	≈ 2 to 3%[4,5] mostly a vein	Repaired immediately during the operation. A blood transfusion is rarely needed.
Warmer left leg	≈ 5%[6]	Caused by moving aside a small nerve (the “sympathetic” nerve) that controls blood flow in the leg. The left leg feels warmer; sometimes it is the right leg that seems cold. Not serious, and it usually fades within a few months.
Slow bowels	≈ 1.5 to 2.5%[4,5]	Bloated abdomen and slow bowels for a few days. Settles with simple treatment.
Retrograde ejaculation (men)	≈ 2%[7]	At orgasm, semen goes back into the bladder instead of coming out. Erection and pleasure are preserved, but **natural fertility is reduced**. In nearly half of cases, it improves over time (see the “Intimate life · Fertility · Pregnancy” box).
Vaginal dryness (women)	Poorly assessed[11]	Reported after this type of approach, due to the small nerves of the lower abdomen. A study that followed patients before and after surgery found no impact on sexual life.
Ureter malfunction	Very rare[10]	The tube that carries urine from the kidney to the bladder, moved aside during the operation, may not work properly: a small internal tube (stent) is then placed temporarily.
Weakness of the abdominal wall	≈ 0.5 to 1%[5,8]	Bulge or hernia at the scar.
Blocked artery in the leg, injury to the bowel	< 0.5%[4]	Treated as an emergency.

Risks specific to the prosthesis

Risk	Frequency	In practice
Leg pain or weakness	≈ 1.5 to 2%[4,5]	Irritation of a nerve, usually temporary. Lasting weakness or loss of sensation is rare.
Bone formation around the prosthesis	≈ 1 in 7[12]	Bone forms around the implant and may reduce its movement. Usually without consequence for the result.
Sinking or shifting of the prosthesis	Rare	Monitored with the follow-up X-rays. This is why we check the strength of your bones before the operation.
Pain in the facet joints	Possible	The small joints at the back of the spine may become painful; treatment (injection) is then possible.
Wear of the neighbouring discs	Possible	This is part of the natural ageing of the spine. A further operation for a neighbouring disc remains rare: less than 2% in the long term[14].
Further operation on the prosthesis	≈ 1% in the long term[14,15]	Removal or replacement of the prosthesis, or conversion to a fusion.
Pain not relieved	< 1 in 10	Even without any complication, the operation may not relieve the pain enough.

These risks are higher in people who are **overweight**, have had **previous abdominal surgery** or **smoke**: we recommend that you **stop smoking before the operation**. We will discuss this in light of your situation.

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INFORMED CONSENT

I, the undersigned _____ , certify that I have received from Dr _____ clear and understandable information about the **lumbar disc replacement** proposed to me: its aims, how it is carried out, the recovery period, its risks and the other possible treatments. I have read this leaflet, I have been able to ask all my questions and I have had enough time to think it over.

I agree to the proposed operation.

Signed at _____

on _____

Patient's signature

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