

# LUMBAR DISC DISEASE

## — Definition and cause

Common lumbar pain (back pain) can have many causes (muscles, ligaments, joints, psychological causes), severe, chronic, invalidating low back pain in young subjects usually finds its origin in a disc: **this is lumbar disc disease**, i.e. progressive degeneration of one or more intervertebral discs.

## — Evolution

Disc disease can take the form of acute lumbar blockage (**lumbago**), which often occurs after an abrupt movement or an effort. The attack naturally tends to clear up in a few days, sometime a few weeks. While these attacks remain isolated in most people, or at least spread out over time, in 5 % of cases lumbago intensifies and flares up with smaller and smaller efforts, until it becomes permanent. The disc cracks, becomes dehydrated and is progressively pinched. Sometimes a fragment of the disc is expelled and compresses the nerve roots located just behind: this is a herniated disc phenomenon that is responsible for sciatic leg pain, among other problems. In some cases this disc herniation appears suddenly when discopathy begins to develop, in people who have absolutely no history of back pain, while in other cases the hernia appears after a long history of low back pain. It should also be pointed out that the more the disc is pinched, the tighter the space around the nerve roots and, therefore, the simple ablation of the herniated disc is sometimes not enough to totally free up the compressed root.

## — Symptoms

Lumbar disc disease can be responsible for two main types of symptoms: backache (**low back pain**) and pain in the legs (**sciatica or cruralgia**). In short, degeneration of the entire disc is what is responsible for low back pain, and disc herniation (or protrusion) is what can compromise nerve roots and trigger sciatica. If a disc is tightly pinched, highly protruding or very inflamed, sciatica may arise even if there is no hernia. Low back pain related to **lumbar disc disease** corresponds to constrictive pain in the lower part of the back. **Remaining seated or standing for long periods** of time quickly becomes very difficult. This pain is very sensitive to effort and often forces the affected person to limit their sporting or professional activities. There is often pain and **morning stiffness** that require a warming-up period before performing everyday activities. The situation can get worse in certain people due to an increase in the frequency, duration and intensity of bouts of lumbar blockage. The pain can become **permanent**, night and day. There is often significant impact on social and family life, which can leave the affected person with a feeling of failure or even depression. Pain from sciatica is described in the herniated disc paragraph.

## — Examinations

Lumbar disc disease can be easily diagnosed with an **MRI of the lumbar spine**, which is the best examination for assessing the disc's condition. X-rays of the entire spine are also important for spinal surgeons in order to gain an overall view of the back's shape, which can influence treatment decisions. If the disc has already degenerated to the osteoarthritis stage, a lumbar spine scan can give a better impression of the spine's bone contours.

## — Treatment possibilities

Low back pain treatment is always medical to start. This can be done by a general practitioner, often collaborating with a rheumatologist, a physiotherapist or a pain physician. This treatment will include rest during flare-up periods, **analgesic and anti-inflammatory** medication prescribed in increasing doses, physiotherapy and **kinesiotherapy** care and sometimes injections or even immobilisation with a corset brace. Most backaches respond to these treatments well, even if flare-ups do not disappear completely. A more in-depth examination and the **opinion of a spinal surgeon** are indicated if the pain does not respond well to these treatments, and if the symptoms, developing over at least **6 to 12 months** and often much longer, cause major **invalidity in everyday life**.

## — Principle of surgical treatment

Surgery for chronic low back pain can only be envisaged **after a medical treatment that was as long and complete as possible has failed**. Depending on the correlation between the symptoms and the anomalies observed on the imaging examinations, the spinal surgeon may or may not approve an indication for surgery. If there is no paralysis, this surgery will never be mandatory, but will be an additional approach to low back pain for treating the patient. Like all the other treatments applied so far, surgical treatment will have its own success and failure rate and its own risk-benefit ratio, which will be clearly explained by the spinal surgeon to enable you to make your own choice as objectively as possible. Surgery for lumbar disc disease, whether or not it is combined with a herniated disc, consists of

the resection of the entire disc (including the hernia) and its replacement with a removable implant (**disc prosthesis**) or a fixed implant (**fusion cage**). The choice of implants will mainly depend on the scope of the disc's deterioration, since after osteoarthritis begins the use of disc prostheses is no longer recommended. Whichever implant is chosen, the principles behind the operation are as follows: resection of the diseased disc(s), raising the disc space to where it was before pinching, treatment of the compression on the nerve roots by resection of the hernia or the disc protrusion, as well as raising the disc and the foramens, insertion of an implant that will preserve the space and to create and rebalance the back by increasing the lumbar curvature (lordosis) to put as little pressure as possible on the other intact discs in the future.

## — Surgery

Lumbar disc replacement surgery is not performed via the back, like simple herniated disc surgery, but **through the abdomen** so as to produce as little tension as possible on the nerve roots located to the rear of the disc. It is a **minimally invasive technique**, since in a thin subject the prosthesis will be inserted through a 5- to 7-cm incision. Disc replacement is a highly demanding surgical technique, but it is also very respectful of the body's anatomy, which means very little post-operative pain in the vast majority of cases.

## — Clinical post-operative care:

You can first get out of bed a few hours after the operation. The physiotherapist teaches you the gestures that you will need to apply during your convalescence: how to get up, go to bed, bend down, pick up objects off the floor, personal hygiene. Starting on the first day, you will recover a certain degree of **autonomy in performing these everyday gestures**. A corset is required for arthrodesis but not for a disc prosthesis. This is a removable plastic corset adapted to you that is custom moulded. This corset should only be worn when moving; it is not necessary to wear the corset when lying down. **You will be able to go home 24 to 48 hours** after surgery. Prescriptions are given when leaving, including bandages, pain medication and sick leave up until the check-up consultation.

*Only an experienced practitioner can make a precise spinal pathology diagnosis. The practitioner's role is to determine whether a disc or spine anomaly discovered during an imaging exam is pathological in nature. They will then have to determine the risk and potential evolution involved, a key component in therapeutic decision-making. The diagnosis will make it possible to identify, from among these anomalies, those that are not responsible for the symptoms, that do not entail any risk and therefore do not require any particular treatment.*

## — Convalescence

Once back home, the ideal pace of life combines rest in a comfortable position (in a semi-recumbent position with the back at a 45° incline, legs slightly bent at the knees), alternating several times a day with **quiet walking on a flat surface**, initially for 10-15 minutes and increasing up to an hour or two.

For the first few days, do not try to return to your everyday activities (housework, grocery shopping, driving, carrying even light loads). Then, starting in the 2nd or 3rd week, you will be allowed to return to these activities very progressively, listening to your body and any pain when exerting an effort, which you should take as your limit. Renewed pain during convalescence is often the consequence of excessive activity and will tend to disappear when at rest.

Physical therapy will begin after the 3rd week, starting with massages of scar tissue and painful or contracted areas in the spine. Once your body is prepared, **rehabilitation will start with movement** to loosen up your body and to strengthen the spinal cord and lower limbs. You can go back to work and sports activities starting in the 2nd month after receiving a disc prosthesis and between the 4th and 6th months after arthrodesis, unless you are having any particular pain.

Over the long term, there are no particular contraindications and you will be able to lead an **active life and practice sports perfectly normally**.

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