

AN INTRODUCTION TO

MAS[®] PLIF

MAXIMUM ACCESS SURGERY POSTERIOR LUMBAR INTERBODY FUSION

This booklet is designed to inform you about the Maximum Access Surgery (MAS) Posterior Lumbar Interbody Fusion (PLIF) surgical procedure. It is not meant to replace any personal conversations that you might wish to have with your physician or other member of your healthcare team.

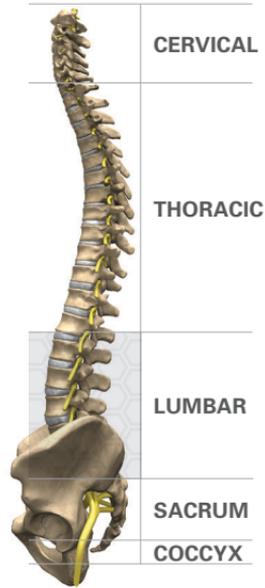
Not all the information here will apply to your individual treatment or its outcome. The information is intended to answer some of your questions and serve as a stimulus for you to ask appropriate questions about the procedure.



About the Lumbar Spine

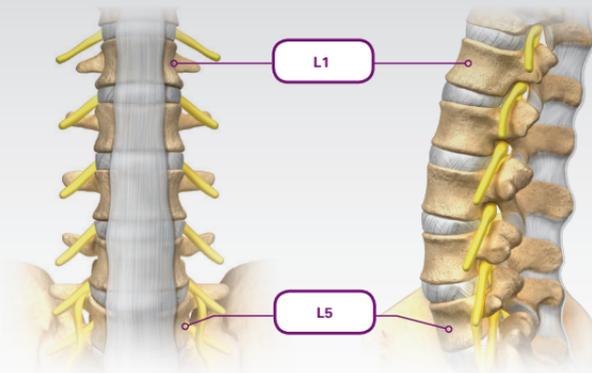
The area of your spine in your lower back is called the **lumbar spine**.

It is made up of five bones, called vertebrae. These vertebrae are connected by several joints, which allow you to bend, twist, and carry loads. The main joint between two vertebrae is called a disc. The disc is comprised of two parts, a tough and fibrous outer layer (annulus fibrosis) and a soft, gelatinous center (nucleus pulposus). These two parts work in conjunction to allow the spine to move, and also provide shock absorption.



ZONE OF SPINE
FOR THE MAS PLIF
SURGERY

Lumbar Spine



Front and side views of the lumbar spine

What is causing my pain?

There are several primary causes of spine problems. The majority of the symptoms are caused by disc, bone, or ligaments pressing onto the nerve roots or cord.

DEGENERATIVE DISC DISEASE

During the natural aging process, the discs between each vertebral body can lose their flexibility, height, and elasticity which can cause a tear in the tough outer layer of the disc, causing the disc to herniate, bulge or leak the gelatinous core. The bulges or leakages can end up compressing the nerve roots and/or spinal cord, causing symptoms including, but not limited to, lower back and/or leg pain.

DEGENERATIVE SPONDYLOLISTHESIS

Degenerative spondylolisthesis is a condition where one vertebra has slipped forward over another one below it. This instability typically occurs as a result of degenerative changes, but may also be caused by stress fractures, congenital abnormalities, and in rare cases from a tumor or trauma.

DEGENERATIVE SCOLIOSIS

Adult degenerative scoliosis is a condition where a right-left or lateral curve develops in a previously straight spine. This curvature occurs as a result of deterioration of the disc and joints in the back of the spine. As the joints degenerate they create a misalignment in the back, resulting in a bend or curvature, causing symptoms including lower back and/or leg pain.

LUMBAR DEGENERATIVE SPINAL STENOSIS

Lumbar spinal stenosis is the gradual narrowing of the space where nerves pass through the spine, and may be the result of aging and "wear and tear" on the spine from everyday activities and/or resultant positional changes of the vertebrae. Pressure on the nerves

may cause pain and/or damage. Symptoms may include numbness and a “prickly” feeling in your legs, calves, or buttocks; aching, dull back pain radiating (spreading) to your legs; and decreased endurance when standing or walking. Symptoms improve when sitting, leaning forward, lying on your back or sitting with raised feet.

What are my treatment options?

Many symptoms can be treated without surgery with methods that involve medication, rest, heat, and physical therapy. It is important that you speak to your physician about the best options for you.

If your symptoms do not improve with other methods, your physician may suggest spinal surgery. Surgery is reserved for those who do not gain relief from non-operative forms of treatment, patients whose symptoms are increasing or worsening, and/or patients that present with a spinal condition which indicates the need for surgery.

Posterior Lumbar Interbody Fusion (PLIF) is a surgical technique that attempts to eliminate instability in the back and pain in the lower back and lower extremities. A Maximum Access Surgery Posterior Lumbar Interbody Fusion (MAS® PLIF) achieves this by using a less disruptive approach to decompress nerve roots and fuse one or more vertebrae together to reduce their motion.

The distinct difference between a traditional “open” PLIF and a MAS PLIF is the medialized surgical approach. The MAS PLIF procedure is designed to eliminate the need to retract muscle laterally, therefore requiring a smaller incision than an “open” PLIF. By minimizing the amount of muscle disruption, this procedure is intended to reduce postoperative approach-related muscle pain and enable a faster recovery for the patient.

Is a MAS[®] PLIF right for me?

Your physician might determine a MAS PLIF procedure is a good option for you if you require an intervertebral fusion at any lumbar level between L1 and S1, and you would benefit from a less disruptive approach.

Conversely, your physician may determine that a MAS PLIF procedure is not a good option for you. It is important to discuss all treatment options with your physician.

What are the potential benefits of having a MAS PLIF procedure?

- Minimal scarring
- Less blood loss during surgery
- Reduced hospital stay
- Faster postoperative recovery time
- Smaller incision
- Less tissue disruption

What can I expect...?

Before surgery

Your physician will review your condition and explain all of your treatment options. Once you have been admitted to the hospital, you will be taken to a pre-op room and prepared for surgery.

BEFORE

DURING

AFTER

What happens *during* surgery?

After you are positioned face down and draped, an x-ray is taken of your spine to show the location of the operative disc space.

**STEP
1**

APPROACH

Your surgeon will make a small incision in the center of your back, near the affected area of your spine, and place the MAS® PLIF access system. The size of the incision can vary based on the number of vertebral levels and/or complexity of your case.

**STEP
2**

SCREW PLACEMENT AND DECOMPRESSION

A retractor is utilized to hold the skin incision open and to provide safe access and visibility to the disc space and affected areas. Your surgeon will then place screws into the vertebrae that will be utilized at the end of the procedure to provide fixation. Next, your surgeon will remove any bony anatomy that is causing back/leg pain (stenosis) in order to relieve the compression of the nerve roots.

What implants are used?

Below are some examples of implants that may be used during your MAS PLIF procedure:

Implant



**Surgical
placement
of implant**



BEFORE

DURING

AFTER

STEP
3

DISC REMOVAL AND IMPLANT PLACEMENT

Your surgeon will then remove the disc and prepare the disc space for fusion. Appropriate implants, chosen by your surgeon, will be placed into the empty disc space to restore the proper disc height and assist in spinal load, alignment, and fusion.

STEP
4

FUSION

In order to stabilize the spine, the screws will be connected with rods. This stabilization will encourage bone to grow and fuse the vertebrae in the postoperative position.



Postsurgical
View



Learn more about MAS[®] PLIF
Visit WWW.NUVASIVE.COM

BEFORE**DURING****AFTER**

What can I expect...?

After surgery

Patients usually require a stay of 1-2 days in the hospital. Your physician will discuss with you what is right for your particular case. The day after your surgery, your physician may instruct you to use a brace for a period of time to assist with the spinal fusion process. Supervised by trained medical professionals, your physician may ask you to carefully sit, stand, or walk within 24 hours of the surgery. Once you are discharged from the hospital it is important to limit your activities for a period of time (determined by your healthcare provider) to give your body a chance to heal. Your physician will discuss with you any pain medications to take home, as well as a prescribed program of activities. Your physician will provide instructions on wound care, exercises, and limitations to postoperative activity.

Are there risks involved?

Keep in mind that all surgery presents risks and complications that are important to discuss with your physician prior to your surgery. Listening to your physician's guidance both before and after surgery will help to ensure the best possible outcomes from your procedure.

Some of the most common complications following MAS® PLIF surgery include: problems with anesthesia, infection, nerve damage, problems with the graft or hardware, and ongoing pain. This is not intended to be a complete list of the possible complications.

Frequently asked questions

CAN I SHOWER AFTER SURGERY?

Depending on your surgical incision, you may have showering restrictions. Ask your physician for appropriate instructions.

WILL I HAVE A SCAR?

Your physician will discuss the incisions that will be made during your MAS® PLIF surgery. Small scars of approximately one and a half inches are common.

WHEN CAN I DRIVE?

For a period of time after your surgery, you may be cautioned about activities such as driving. Your physician will tell you when you may drive again.

CAN I TRAVEL?

The implants used in the MAS PLIF procedure may activate a metal detector. Because of increased airport security measures, please call your local airport authority before traveling to get information that might help you pass through security more quickly and easily. Ask your physician to provide a patient identification card.

Notes

RESOURCES

For more information about the MAS® PLIF procedure please visit:

www.nuvasive.com

If you would like to learn more about patient support and education for chronic back and leg pain sufferers and their loved ones, please visit:

www.thebetterwayback.org

If you have any questions about the MAS PLIF procedure or spine surgery in general, please call or see your physician, who is the only one qualified to diagnose and treat your spinal condition. This patient information brochure is not a replacement for professional medical advice.

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POSTERIOR LUMBAR
INTERBODY FUSION



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