

An introduction to

# Posterior fixation

## For the thoracolumbar spine

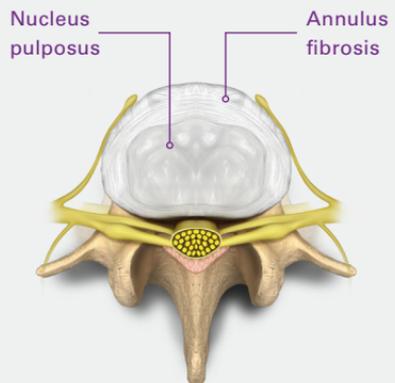
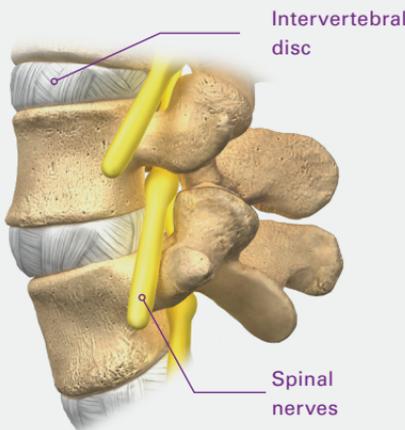
This booklet provides general information on posterior fixation procedure options for the thoracolumbar spine. It is not meant to replace any personal conversations that you might wish to have with your physician or other member of your healthcare team. Not all the information here will apply to your individual treatment or its outcome.



# About the spine

The human spine is made up of 24 bones or vertebrae in the cervical (neck) spine, the thoracic (chest) spine, and the lumbar (lower back) spine, plus the sacral bones.

Vertebrae are connected by several joints, which allow you to bend, twist, and carry loads. The main joint between two vertebrae is called an intervertebral disc. The disc is made 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.

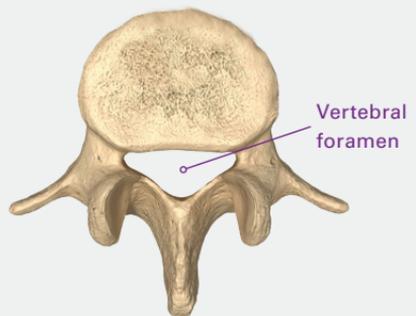
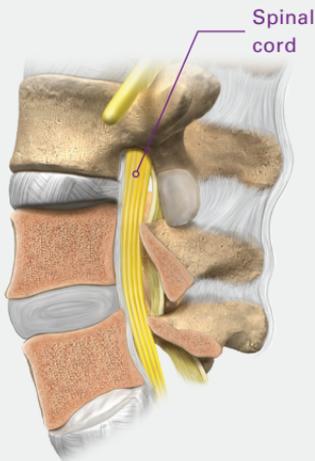
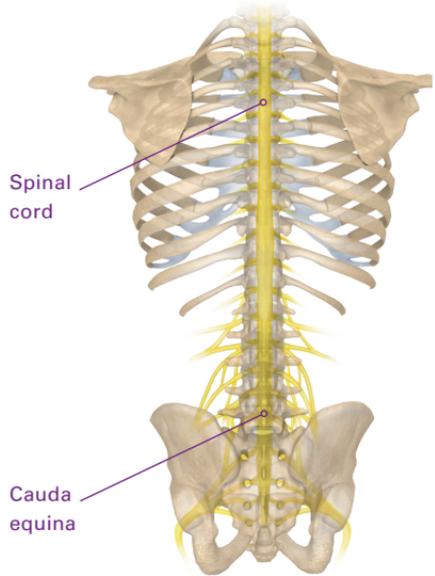


# About the spinal cord and cauda equina

Each vertebra has an opening (vertebral foramen) through which a tubular nervous structure travels. Beginning at the base of the brain to the upper lumbar spine, this structure is called the spinal cord.

Below the spinal cord, in the lumbar spine, the nerves that exit the spinal cord continue to travel through the vertebral foramen as a bundle known as the cauda equina.

At each level of the spine, spinal nerves exit the bony spine then extend throughout the body.



# What can cause pain?

There are several possible causes of spine problems. The most frequent symptoms are caused by either instability or by disc, bone, or ligaments putting pressure on (compressing) the nerve roots, spinal cord, or cauda equina.

Some causes may include acute and chronic instabilities or deformities of the spine:

- Degenerative disc disease (DDD)
- Spinal stenosis
- Spondylolisthesis
- Spinal deformities
- Fracture
- Pseudarthrosis
- Tumor resection
- Trauma
- Failed previous fusion

# What are treatment options?

Many symptoms can be treated without surgery including rest, heat, ice, medication, injections, and physical therapy.

If symptoms do not improve with conservative treatment, physicians may recommend 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. It is important to speak with a physician about the best option.

# What is posterior fixation for the thoracolumbar spine?

Posterior fixation for the thoracolumbar spine is a procedure intended to provide realignment, immobilization, and stabilization of spinal segments in skeletally mature patients throughout the healing process, allowing fusion to occur.



## Can posterior fixation be right for me?

Your physician might determine posterior fixation is a good option for you if you require additional support for your interbody fusion procedure, are skeletally mature, and have gone through six weeks of non-surgical treatment. Interbody fusion is a surgical technique that attempts to restabilize the back.

Conversely, your physician may determine that posterior fixation is not a good option for you if you are not a good candidate for fusion surgery in general due to other medical conditions. These conditions can be but are not limited to, signs of inflammation or infection near the operative site, patient sensitivity to implant materials, patients with inadequate bone quality, and other indications.

# What to expect

## Before surgery

Your physician will review your condition and explain treatment options, including medications, physical therapy, and other surgeries. Should you have any questions regarding the procedure, do not hesitate to ask your surgeon. Your physician will provide thorough preoperative instructions.

## During surgery

After you are sedated, positioned face down, and surrounded by the appropriate surgical draping, an X-ray image is taken of your spine to identify the location of the operative disc space.

### Step 1: Approach

#### **MAS® (Maximum Access Surgery)**

Your surgeon will make a series of small incisions off to the side of the medial (middle) portion of your back. Probes connected to nerve monitoring equipment are introduced into the small incisions to direct the optimal path to the affected vertebral bodies. Your surgeon will then be ready to decompress (remove) the areas that are putting pressure on the spinal cord and/or nerve roots.

#### **Open**

Your surgeon will make an incision down the midline of your back. Tissue is then retracted or pulled back laterally to expose the affected vertebral bodies. Once the exposure is complete your surgeon will then be ready to decompress the affected areas.

### Step 2: Decompression

Your surgeon may then choose to decompress portions of the affected vertebrae and discs. Decompression may be necessary if the symptoms are caused by a compression of the spinal cord and/or nerve roots.

### Step 3: Stabilization or fixation

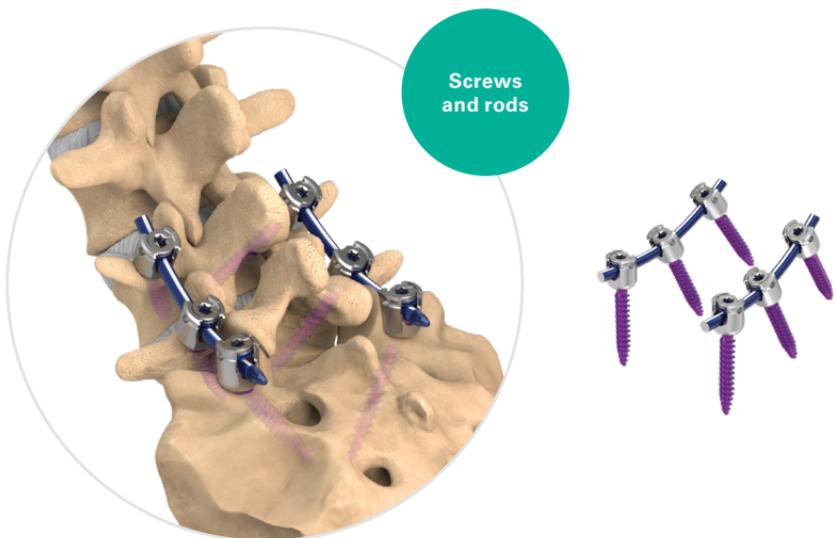
Your surgeon will then use screws and rods to stabilize or fixate the affected vertebral bodies. The combination of screws and rods act as an internal brace or stabilization device to help hold everything in place. Your surgeon will determine the appropriate use of fixation implants during the procedure.

### Step 4: Fusion

Your surgeon will then tighten and lock down the construct (combination of screws and rods), which will allow the affected vertebral bodies to fuse. This means the bone will grow around the affected areas and heal. This can take various lengths of time depending on the severity of the condition. The area will eventually stabilize itself once fusion has occurred.

## What implants are used?

Below are some examples of the implants that may be used during your posterior fixation procedure:



## After surgery

After surgery you will wake up in the recovery room, where your vital signs will be monitored and your immediate postoperative condition will be carefully observed. Once the medical staff feels that you are doing well, you will be returned to your room in the hospital.

Your physician will determine the best postoperative course for you. This will include any 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.

## What are the potential risks of a posterior fixation procedure?

Keep in mind that all surgery presents risks and complications that are important to discuss with your surgeon prior to your surgery. Listening to your physician's guidance, both before and after surgery, will help your recovery.

Potential risks following a posterior fixation procedure include:

- Problems with anesthesia
- Infection
- Nerve damage
- Problems with the implants or hardware
- Ongoing pain

This is not intended to be a complete list of the possible complications. Please contact your physician to discuss all potential risks.

# 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 a posterior fixation surgery.

## **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 a posterior fixation 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

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## Resources

For more information about posterior fixation, please visit:

**[nuvasive.com](http://nuvasive.com)**

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

**[thebetterwayback.org](http://thebetterwayback.org)**

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*If you have any questions about posterior fixation or spine surgery, please call or visit 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.*

## About **The Better Way Back**<sup>®</sup>

The Better Way Back is a nationwide patient support program created by NuVasive<sup>®</sup>, a leader in developing minimally invasive, procedurally-integrated spine solutions. The Better Way Back is a free community built on the power of empathy, and is dedicated to providing hope, support, and information to individuals suffering from chronic back, leg, or neck pain.

Through its Patient Ambassador Program, The Better Way Back pairs patients considering spine surgery with patients who have previously undergone a spine procedure. Ambassadors volunteer their time to discuss their experiences in order to provide additional, first-hand perspectives.

To learn more about The Better Way Back, please



call **1-800-745-7099**



visit **thebetterwayback.org**



text "TBWB" to **858-360-8292**

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