

## AN INTRODUCTION TO

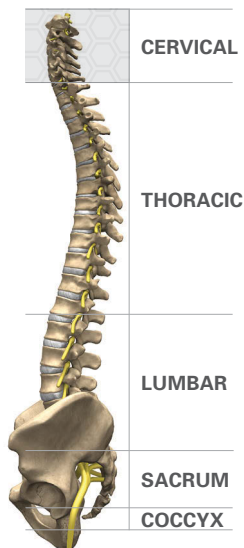
# PCF | POSTERIOR CERVICAL FUSION

*This booklet is designed to inform you about the Posterior Cervical Fusion (PCF) 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.*

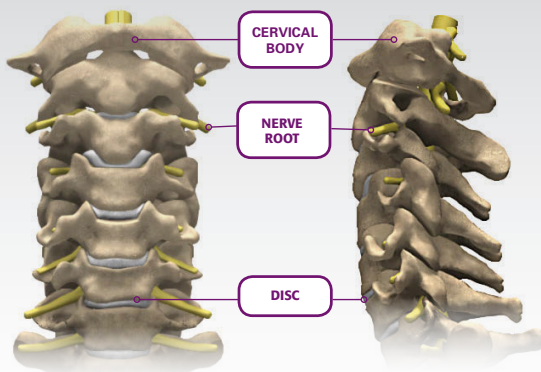
## About the Cervical Spine

The area of the spine in your neck is called the **cervical spine**. It is made up of seven bones, called vertebrae (or vertebral bodies). These vertebrae are connected by several joints, which allow you to bend, twist, and move your neck. 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 bend, twist, and also provide shock absorption.



ZONE OF SPINE FOR THE PCF SURGERY

### Cervical Spine



Front and side views of the cervical spine

# What is causing my pain?

There are several primary causes of cervical spine problems.

The majority of the symptoms are caused by disc, bone, or ligaments pressing onto the nerve roots or cord.

## **DEGENERATIVE DISC DISEASE (DDD)**

During the natural aging process, the discs between each vertebral body can lose their flexibility, height, and elasticity. This can lead to a tear in the tough outer layer of the disc, causing the gelatinous core to bulge or herniate.

## **NERVE COMPRESSION**

Cervical disc bulging or herniation can cause pressure on the nerve roots and/or spinal cord causing symptoms including radiating arm, neck, and shoulder pain, loss of dexterity or motor function, and numbness and tingling in the hand or arm.

## **CERVICAL CORD COMPRESSION**

In some patients, the spinal cord can be compressed by bony osteophytes (spurs), herniated discs or by other soft tissues such as ligaments. This is often referred to as spinal stenosis, which can lead to symptoms including: radiating arm pain, arm and hand weakness and numbness, loss of dexterity and motor function, gait instability, and neck 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, or congenital abnormalities, and in rare cases from a tumor or trauma.

## **What are my treatment options?**

Rest, heat, electrotherapy, physical therapy, and pain medication are all options to help treat your symptoms. You should talk to your physician about all viable options for your specific symptoms.

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.

## **Is Posterior Cervical Fusion (PCF) Spine Surgery right for me?**

In the cervical spine (neck), surgery is often performed via the posterior approach to address a multitude of indications, including degenerative disc disease, dislocation, fractures, instability, or soft disc herniation. Your physician may determine that the PCF procedure is a good option for you if you require an interbody fusion, are skeletally mature, and have gone through six weeks of non-surgical treatment.

Conversely, your physician may determine that a PCF procedure 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 may be associated with a poor tolerance with regard to general anesthesia, inability to tolerate a prone position, and inadequate bone quality preventing adequate fixation of the instrumentation, as well as other indications. It is important to discuss this with your physician in order to determine the best course of treatment for you.

## What are the potential benefits of having the PCF procedure?

Posterior Cervical Fusion (PCF) is the technique of joining the bones in the back of the cervical spine together. Over time these small bones fuse together to form an internal brace and stabilize the cervical spine, reducing painful motion or spinal cord compression.

The benefit to the patient is stabilization, possible reduction in pain, reduction in continuing degeneration, and maintaining stability after a laminectomy (surgery to remove the lamina or back part of the vertebra that covers your spinal canal to relieve pressure on the spinal cord or nerves).

## What can I expect...?

### *Before surgery*

Your physician will review your condition and explain all of your treatment options, including medications, physical therapy, and other surgeries such as removal of the diseased disc, fusion, etc. You will be required to fast the evening before surgery and you may need to stop taking some medications in advance of the procedure. These medications may include aspirin and nonsteroidal anti-inflammatory drugs, as well as blood thinners. Additionally, all nutritional supplements need to be stopped at least one month prior to surgery. Before your surgery you will meet with a spine surgeon to review the surgery, the area of the cervical spine being operated on, and sign consent forms. He or she will discuss potential risks and benefits of the procedure and this is a good time to ask questions. You may be measured for a cervical collar or brace prior to surgery. Your surgeon may also schedule you for a pre-surgical medical evaluation.

**BEFORE**

**DURING**

**AFTER**

# What happens *during* surgery?

## SURGICAL PROCEDURE

**STEP  
1**

### APPROACH

An incision is created over the treatment area at the midline of the back of the neck.

**STEP  
2**

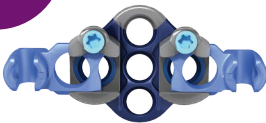
### DECOMPRESSION

Some removal of impinging bone may be performed (laminectomy or facetectomy) if direct spinal cord decompression is necessary.

## What implants are used?

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

**Occipital  
plate**



**Rods with  
hooks or  
screws**



BEFORE

DURING

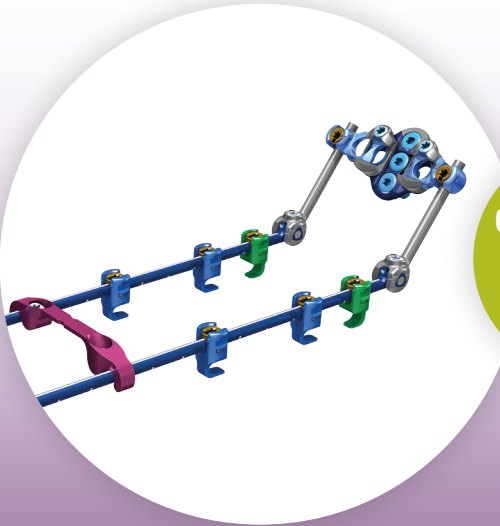
AFTER

**STEP 3** **IMPLANT**

Instrumentation is inserted to provide stabilization at the treated levels. Rod systems with hooks and screws are the most common instrumentation used in this surgery; they increase stability and rate of fusion. Rods will then be contoured and inserted to fit the space. The rods will be secured in place with locking screws.

**STEP 4** **FUSION**

Once the instrumentation has been secured in place, fusion can occur.



Occipital plate with rods, hooks, and screws



Learn more about PCF  
Visit [WWW.NUVASIVE.COM](http://WWW.NUVASIVE.COM)

BEFORE

DURING

AFTER

## What can I expect...?

### **After surgery**

You may or may not need a neck brace after surgery. This is dependent upon your surgeon and the specific procedure, as well as the number of levels involved. You may experience postoperative pain as well as muscle spasms at your surgical site. This is well controlled with pain medications and muscle relaxers that can be prescribed by your surgeon. It is not uncommon to spend the first night or two with the head of your hospital bed elevated to decrease pain and swelling. Often times, there is a small drain tube that is removed on the first or second day after surgery; this is painless. Physical and occupational therapy is sometimes needed after surgery to help restore you to your normal activities of daily living. Bending, twisting, and lifting will be advised against for a period of time after your surgery. You cannot drive a car until you are out of your cervical collar, have sufficient neck range of motion to see while driving, and are no longer taking pain medication. You can, however, be driven or fly on a plane as soon as you feel up to it. 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 outcome from your procedure.

*Risks associated with PCF include:* axial neck pain, morbidity (incidence of disease), stiffness, loss of range of motion, paralysis, bleeding requiring a blood transfusion, failure of the fusion, failure of the instrumentation, nerve root injury and dural tears.



# 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?**

This surgery involves a small incision on the posterior (back) of your neck. Ask your physician for more information as every patient is different.

## **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 PCF 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.





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