

What is going on with my spine?

You have been deemed a candidate for cervical decompression and fusion. This is typically done to alleviate pressure on the spinal cord and/or nerve roots from spinal stenosis or a disc herniation.

Compression of the spinal cord also known as cervical myelopathy can cause changes in balance and/or hand function. Compression of the spinal nerve roots can cause pain, numbness and/or weakness in the arms. When the nerve roots are compressed, this is known as foraminal stenosis. When the spine has central canal stenosis, this will typically compress the spinal cord. Both foraminal and central stenosis can develop as a result of disc herniation or bony overgrowth from arthritis.

How is the procedure performed?

To fix the problem, Dr. Hoffman will make an incision on the front (anterior) or back (posterior) of your neck depending on which approach is necessary. There are a variety of reasons why an anterior approach may be chosen versus a posterior approach. Your surgeon will discuss which approach is right for you and why. For an anterior approach, a small incision is made on the front of the neck (it can be left or right sided) and is typically barely visible once it is fully healed. A posterior approach will usually be a vertical incision located in the center of the back of the neck.

Dr. Hoffman will carefully dissect in a minimally invasive manner through the soft tissues down to the spine. If an anterior approach is performed, the esophagus and trachea must be retracted or pushed to the side to get safely down to the spine. Once on the spine, an x-ray will be taken to confirm the appropriate level. With an anterior approach, the intervertebral disc is removed. This takes the pressure off the spinal cord. This also allows Dr. Hoffman to reach into the tunnels/neural foramen where the nerves leave the spine and take the pressure off the nerve roots. Once she has completed decompressing or taking the pressure off the nerves and/or spinal cord, she will place bone graft into the space where the disc was located. In most cases, the bone comes from a cadaver donor. This piece of bone will fill the disc space and keep the pressure off the nerves. Dr. Hoffman will then place a small plate and screws on the front of the spine to hold the bones in the correct position. An x-ray is taken at the end of surgery to check the final position.

In a posterior approach, the discs are left in place as you cannot reach them due to the spinal cord being in the way. Laminectomy or laminoforaminotomy (both ways to take pressure of the nerves/spinal cord) is performed from the back of the spine. This involves removing bone from the back of the spine to take the pressure off the nerves or spinal cord. Dr. Hoffman will then place small titanium screws and rods in the spine to hold the spine in the proper position and provide support. Bone graft is packed around the hardware to help the body fuse the affected section of the spine. In a posterior approach, the bone graft will come from the bone that is removed during decompression. Occasionally, it is necessary to add some donor bone if there is not enough of your own bone harvested during the decompression. An x-ray is taken at the end of surgery to check the final position of the screws and rods.

The incision is then washed out with fluid containing antibiotics and closed. An anterior approach will use a dissolvable suture with skin glue over the top. A posterior incision will have a nylon suture placed in the skin. This will be removed at the first post operative visit.

Who will be with me in the operating room?

The operating room team is well versed in spine surgery. Your surgeon will lead the team which will include the following:

-Anesthesiologist/nurse anesthetist

-First assist: the physician assistant, or orthopedic resident (all have trained to be a surgical assistant; be advised ONLY Dr. Hoffman will perform the operation). The role of the first assist consists of assisting with positioning, draping, suction, retraction and wound closure.

-Scrub nurse or tech: responsible for handing the surgeon any instruments or items needed for the procedure

-Circulator nurse: responsible for obtaining any items the surgeon requests as well as putting information in the medical record via the computer regarding the case

-Neurophysiologist: responsible for monitoring the nerve roots and spinal cord during surgery. This is done via EMG (electromyography) and stimulating signals that pass through the spinal cord during surgery to confirm there have not been any changes in spinal cord function. Monitors are placed for this purpose once the patient is asleep. They are removed before the patient wakes up from anesthesia. You will meet your neurophysiologist the morning of surgery. Neural monitoring during spine surgery is the standard of care during a cervical procedure.

What type of anesthesia will be used for my procedure?

All spine surgery is done under general anesthesia. This is required because we are working next to nerves, spinal cord, etc. and patients need to remain still during the procedure. This can only be achieved with general anesthesia and is the standard of care for spinal surgery.

How big is the incision?

An anterior incision is typically 2 inches and usually horizontal. A posterior incision is typically at least 3.5 inches long. For a multilevel surgery, the incision can be longer as each level requires additional exposure.

How long will my surgery take?

This depends on the amount of levels involved and the severity of compression. Typically, the procedure takes 2-4 hours once incision is made.

Do I need to stop any medications prior to surgery?

All blood thinning medications need to be stopped at least a week prior to surgery. This includes but is not limited to NSAIDs (non-steroidal anti-inflammatory drugs) such as ibuprofen (Motrin, Advil), aspirin, celecoxib (Celebrex), meloxicam (Mobic), etodolac (Lodine), prescription blood thinning drugs like warfarin (Coumadin), rivaroxaban (Xarelto), apixaban (Eliquis). If you are taking any medications for autoimmune disease, they may need to be stopped as they affect the immune system and can increase the risk of infection. These medications should be discussed with either your surgeon, physician assistant, primary care physician or rheumatologist.

Will I need to stay in the hospital?

This is patient specific and depends on a number of factors such as the patient's medical health and the number of levels involved in the surgery. The average length of stay in the hospital is typically 1 night for anterior approach and 2 nights for a posterior approach.

What is the infection risk?

The risk of infection is very low, however anytime you make an incision on the body the risk does exist. This risk is elevated in diabetics, patients with autoimmune disease (lupus, rheumatoid arthritis, etc.) and obese patients. The risk of infection after an anterior approach is approximately 0.1% while posterior approach is 1.75%.

Will I lose range of motion?

Many patients report improved range of motion after surgery as their difficulty with range of motion prior to surgery was due to pain. Typically, you will not experience a noticeable difference in range of motion in a 1 or 2 level surgery. If 3 levels or more, you may notice a change in flexibility but you will still be able to perform tilting, looking side to side and nodding the head up and down. The only time there are complete changes in range of motion are when the back and of the skull and C1 are fused together (this will limit nodding up and down) or when C1 and C2 are fused together (this will limit side to side rotation).

Where does the bone graft come from?

The bone graft typically comes from a donor in anterior approach. Occasionally a bone graft may be taken from the patient's hip but this is not done commonly. In a posterior approach, the bone that is decompressed or removed from the spine to take the pressure off the nerve roots/spinal cord is used. The surgeon may augment this with donor bone if they need more.

Can the surgery be done with a laser?

No. Contrary to what many patients have heard, the laser instrument is only used for cautery and a traditional incision is required regardless of whether a laser is used or not. Lasers are available at the hospital and can be effective for other types of surgery (eye surgery, urology, dermatologic surgery, etc.). The laser also generates a significant amount of heat, which can increase scarring and damage to the soft tissue. The cautery instrument used in your procedure to control bleeding generates less heat and is accompanied by saline which helps to keep the tissue cool. There is no evidence to support claims of 98% satisfaction with laser spine surgery. If a laser were that successful, your surgeon would of course use one.

Is there a risk of paralysis with the procedure?

Anytime you are working where the spinal cord exists, there is a risk of spinal cord/nerve root injury. Dr. Hoffman utilizes neural monitoring during the surgery to ensure that your nerves and spinal cord are safe and protected. Before the procedure begins, a neurophysiologist will place small monitors on your head, arms and legs. Throughout the surgery, the conduction of your nervous system will be checked and monitored. The neurophysiologist will alert Dr. Hoffman if nerve irritability is detected. If there are any changes in conduction, we can take preventative actions to prevent you from having most neurological injuries.

What about the instrumentation/hardware?

The spinal hardware is made of titanium as it is MRI safe and usually does not set off a metal detector in an airport.

When will my symptoms improve?

Unrealistic expectations such as having the "perfect neck" or "perfect life" are not helpful to healing. The surgery can help improve function and decrease pain, but the surgeon is fixing something "broken" and not creating something "as good as new." This is an important concept as typically in patients with stenosis, the spine is often arthritic overall and surgery is only recommended for moderate to severe compression with correlating symptoms. It is important to focus on this and mentally prepare yourself so that you put yourself on a reasonably successful path to recovery.

Arm pain is usually improved or relieved quickly as the likelihood of alleviating this symptom is 90-95%. In some patients, relief is immediate and in others it is more gradual. This often depends on the severity of compression, how much the nerve was irritated, and how long the problem went on before surgery. Numbness/tingling is typically the slowest symptom to improve. It does not always resolve in every patient but can take up to 18 months before you can say whether or not it has resolved or improved. In some patients, numbness/tingling may improve immediately. If the patient is diabetic, relief is less certain as it makes it more difficult for nerves to heal. While the purpose of the surgery is not to alleviate neck pain, incisional neck discomfort improves each week. Most patients find their incisional pain to be at its worst for the first few days to a week. The more you walk, the better the neck will feel. Remember the purpose of the surgery is to alleviate arm pain (also known as radiculopathy) or take the pressure off the spinal cord to prevent worsening balance or hand function. Unrealistic expectations, such as having the perfect neck or perfect life are not helpful to healing.

If surgery was done for spinal cord compression or weakness, remember the purpose of the operation is to stop your symptoms from worsening (changes in balance or hand function and weakness). Those functions that have already been affected may or may not improve. The purpose of the operation is stop it from getting worse, however we can see improvements in these areas up to 6 months after surgery. Failure to intervene surgically in the setting of spinal cord compression can lead to permanent neurologic damage and functional problems. In the setting of severe compression which has been present for an extended period, nerves may never fully recover or may take more time to do so.

Should I go to physical therapy?

The decision on whether to order physical therapy or not is decided on a case by case basis. The most important therapy is walking and this can be done at home. It is more about frequency than distance. Walk every 20-30 minutes. Typically, physical therapy is not prescribed until at least 6 weeks after surgery. At 6 weeks, restrictions are lifted. Starting outpatient physical therapy too early can actually cause increased pain as the muscles need time to heal. Do not start lifting weights or resume gym activities until released by your care team.

What are my restrictions after surgery?

It is very important to abide by your restrictions. No bending, lifting, or reaching overhead until released by your care team. These restrictions typically stay in place for 6 weeks after surgery. Your surgeon or physician assistant may permit you to do some light lifting but this will be discussed at your office visits. Walk every 20-30 minutes. Walking is the most important part of recovering from a spinal operation. The more you walk, the better the incision will feel and the better you will feel. Stamina is decreased after any type of surgery and walking helps energy levels come back and will decrease post-operative fatigue.

How will Dr. Hoffman control my pain?

Dr. Hoffman is committed to minimizing your post-operative pain. Protocols for pain control have been developed based on evidence-based medicine on what works best while also minimizing side effects and abuse potential. The hospital team, which includes surgeons, medical physicians and anesthesiologists, has developed a protocol for pain control based on these studies. Pain control begins before surgery as your anesthesia team will begin to give you medication through your intravenous line prior to surgery. These medications are also continued during the operation. You will also be given medication to prevent post-operative nausea, and an intravenous antibiotic to prevent post-operative infection. After surgery, patients will usually receive a narcotic script as this is typically needed short term following spine surgery. You will also be given a script for a stool softener to prevent constipation as this often occurs following anesthesia and is a side effect of narcotic pain medication. Anti-inflammatory medication is prohibited during the first 12 weeks after surgery as it can interfere with bone healing and affect the success of the bone fusion.

The two most common areas of discomfort are from the neck to the shoulders and in the back of the neck down to between the shoulder blades. This tends to be less in an anterior approach. Some patients have a temporary odd feeling with swallowing after anterior approach only. This is due to inflammation and retracting the esophagus during the operation. This gets better with time and semi-solids (milk shakes, mashed potatoes, yogurt) may help. If it becomes very bothersome, contact our office as a short course of oral steroids typically makes a huge difference in getting to improve faster.

Will I need to wear a brace after surgery?

A collar is worn after surgery 24/7. In surgeries that are 2 levels or less, it will be a soft collar for 2 weeks. For 3 levels or more, a hard collar is worn for 6 weeks. You will also be given a second collar for showering that is waterproof.

What if I have increased numbness after surgery?

It is not uncommon to experience numbness/tingling after surgery since it is the slowest symptom to resolve. Initially, the numbness may be of greater intensity than before surgery, but increased numbness will subside over time as you heal. Please report any new locations of numbness or new sensations, but be aware this typically occurs from nerve manipulation and will decrease with time.

If I take narcotic pain medicine, do I need to be aware of anything specific?

While narcotics can be an effective option for pain relief, they are meant to be taken short term only. For decompression and fusion surgery, we will only prescribe narcotic pain medicine for a maximum of 12 weeks. Patients should try to begin decreasing usage or use Tylenol after their first post-operative visit and rely less on the narcotic pain medicine. Narcotics also cause a variety of side effects including but not limited to fatigue, nausea, constipation, sweating, flushing, and confusion. You are not permitted to drive a vehicle until you discontinue use of narcotic pain medication. If you are taking narcotics prior to surgery, it would be helpful to either decrease your use or wean off the medicine. Patients who take narcotics prior to surgery, develop tolerance to the medication as the pain receptors in the brain and nervous system become used to having the medication present. These patients tend to have lower pain level tolerance and it becomes increasingly difficult to control their post-operative pain as they require more and more pain medication to achieve the same level of pain control than prior to surgery. The ability to control pain after surgery is much more successful if the patient slowly decreases or weans off the narcotic pre-operatively. Please be advised if you have a pain management physician or an outside provider who prescribes your pain medication, you will need to continue to get your medication from them. Narcotics cannot come from multiple providers and pain management physicians usually have an opioid agreement on file as this is now required by most insurance companies. Obtaining prescriptions from more than one provider would violate this agreement and could result in dismissal from the pain management physician or refusal to write any more prescriptions. The pharmacy may also refuse to dispense the medication. Lastly, the rules regarding dispensing narcotics change frequently and many insurance companies have their own rules regarding the quantity a patient may have at a time and when refills can be obtained. Patients must take the medication as directed. For your protection, you will receive a narcotic prescription or refill only when you request it and it is deemed medically appropriate by your physician or physician assistant. Refills will not be considered over the weekend, at night through the on-call service or on holidays.

How important is nutrition?

Nutrition is vital to healing-especially protein. Make sure you drink plenty of fluids. Narcotic pain medicine can sometimes suppress appetite. If you have no appetite, please try a Boost protein shake over ice. Nutrition aids specifically with wound healing and return of stamina.

Will I need to go into a rehabilitation facility after surgery?

This is not typical as most patients are discharged home. Occasionally, a rehab facility may be chosen if the patient needs more care but this is determined on a case by case basis. The most important rehabilitation after surgery is frequent walking. The risk of infection is also lower when patients go home after surgery.

When will I have my follow up appointment?

The post-operative appointment is 2-3 weeks after surgery. This is typically already set up at the time the surgery is booked. If you do not have an appointment scheduled, please call (301) 657-9876.

How do I take care of my incision?

No baths, pools or hot tubs until cleared by your physician or physician assistant. You can uncover the incision 72 hours after surgery. If the incision is dry, you can leave it open to air. Once you are 72 hours from surgery, you can shower. Put on your shower collar and if the incision gets wet, pat it dry gently before switching to your regular dry collar. Do not apply any ointments or creams to the incision. Notify the office of any drainage or changes to the incisional appearance. It is not uncommon for the incision to feel warm to the touch, exhibit bruising or itch. Please resist the urge to scratch the incision as this can cause an infection. You can take an anti-histamine such as Benadryl, Claritin, Zyrtec etc. to help with this. As stated, in an anterior approach the closure will be dissolvable while there will be a nylon suture placed in the skin with posterior approach. This is removed at the post-operative visit. Removing the sutures is typically painless and most patients will remark that they do not really feel anything during the removal.

Do I need to monitor my temperature after surgery?

It is common to run a low-grade temperature after any type of surgery. Notify the office if you have a temperature over 101.5 degrees.

What do I need to do regarding short term disability while I recover from my procedure?

Please check with your human resources department regarding what they require for temporary disability. If your employer requires documentation or forms filled out, our office will provide the necessary information. Some patients may return to work sooner than others depending on their job requirements and speed of recovery. All disability matters are handled by contacting our office as we have a dedicated disability form department located in our central business office. Physician approval is required prior to returning to work.

How can I get in touch if I have a question or concern?

The best way to get in touch is through our dedicated line at **301-657-9876**. Messages will be directed to Dr Hoffman and she or a member of her team will call you back in a timely manner. Our main phone number will be directed through an on-call service after hours, on weekends and holidays. This line is reserved for emergencies only. If your call is not of an urgent nature, please call during normal business hours.