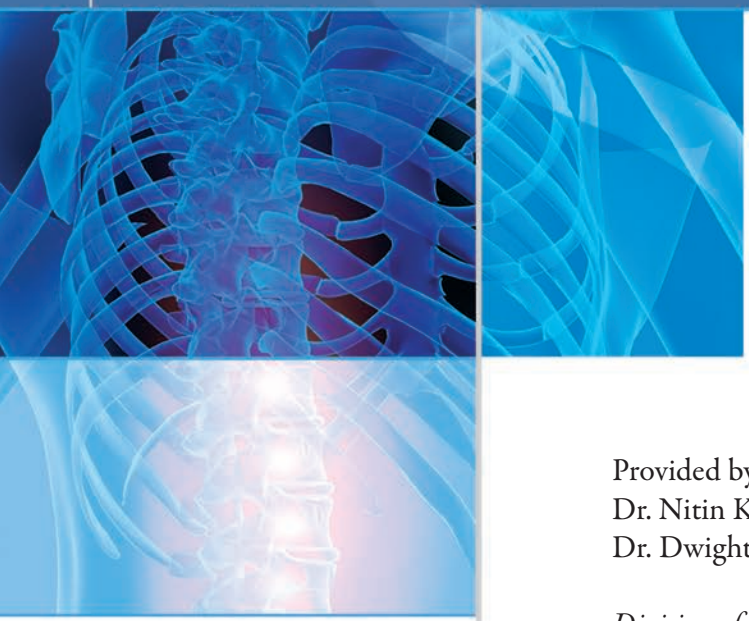
Anterior Lumbar Interbody Fusion

Instruction Book



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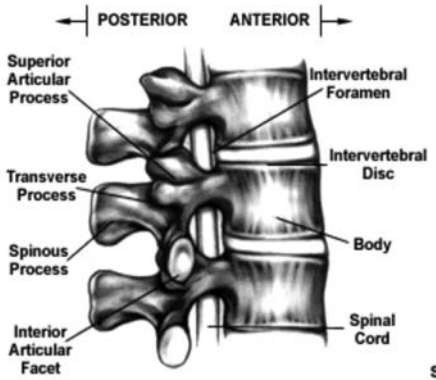
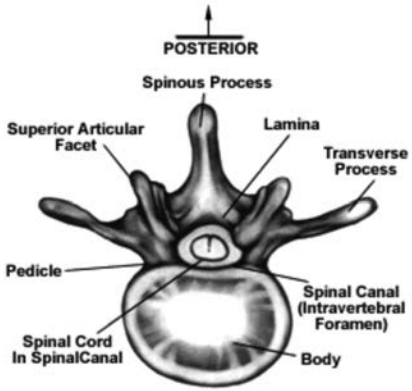
LUMBAR ANATOMY

The spine provides support for the body. It also provides a protected conduit for the spinal cord and nerves.

The lumbar spine is composed of five lumbar vertebrae. These are separated by the shock absorbing discs. The nerves lie behind the discs.

When looking at spinal anatomy, it is often helpful to look at the spine in segments. A spinal segment is made up of two vertebrae, the intervertebral disc, and associated nerve roots.





Vertebrae: The bones of the spinal column. The main part is the round block called the vertebral body. A bony ring is attached to the back, which consists of two pedicle bones and two lamina. The spinous process is the bony knob, which can be felt on the back.

Pedicle/Lamina: The two parts of a bony ring, which connect to the back of each vertebral body. A hollow area is formed between the vertebral body and this bony ring. This is where the spinal cord lies.

Facet Joint: The joints connecting the vertebra. There are two facet joints per vertebra. The facet joints connect the vertebrae and allow movement.

Disc: Cushion-like pad, consisting of a jelly like center and a tough outer ring. It acts like a shock absorber, load distributor and spacer.

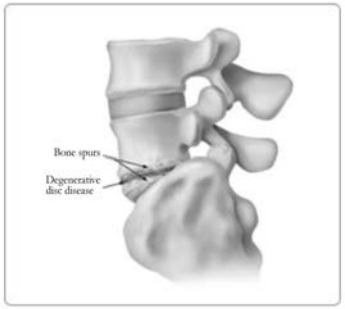
Neural Foramen: The opening in which the nerve roots exit from the spinal cord. If this area becomes smaller, either by age or a herniated disc, the nerve root can get squeezed, thus causing pain and/or dysfunction.

Spinal Cord: Pathway in which the brain sends signals to the rest of the body to control sensation and movement.

Nerve Root: Bundles of nerve fibers that exit the spinal cord. Each provides a sensation and function to a specific area of the body. Two roots exit the spine at each vertebral level.

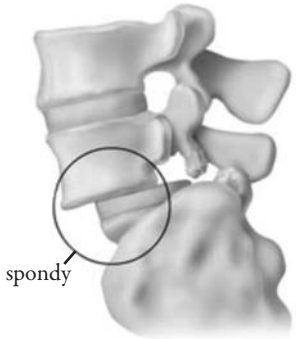
ANTERIOR LUMBAR INTERBODY FUSION

A lumbar fusion is used to stabilize the spine. The following are common conditions that can lead to spinal instability. If you are not sure exactly what condition or conditions you have, please make sure to let us know. It is important for you to understand your condition and expected outcome.



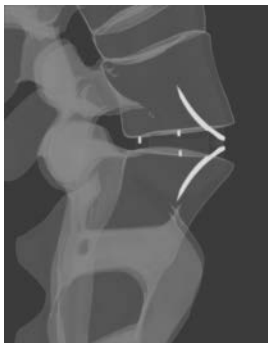
Degenerative Disc Disease
As we have learned, the discs lie between the vertebrae. The spinal cord lies behind the discs. As we age, the disc can begin to lose water content. This is called degeneration and can weaken the disc making them ineffective as shock absorbers and spacers. This can destabilize the spine and cause great pain.

Pars Fracture / Spondylolysis
Sometimes a fracture can form in part of the bony ring that surrounds the spinal cord (Pars fracture). This can allow one vertebrae to slip forward (Spondylolisthesis). This can cause instability in the spine. The slippage can also cause compression on the nerve roots.



Recurrent Disc Herniation
Occasionally, if a lumbar disc re-herniates, spinal instability may occur. If this is the case, a lumbar fusion may be the best treatment option.

The Anterior Lumbar Interbody Fusion technique has many advantages over a Posterior Fusion. The anterior approach does not require the splitting of back muscle while approaching the spine. This typically leads to a quick recovery and less postoperative pain. The approach does require mobilization of the great vessels. In order to do this safely, we work with a general surgeon that has experience with this approach. We have all patients meet the general surgeon prior to surgery.



The incision is usually placed below the umbilicus (belly button). It typically is 4-5 cm in length, though size may vary depending on the patient's body size. The dissection performed by the general surgeon involves a muscle sparing approach to the anterior spine. The great vessels (Iliac Vessels) are protected with retractors. We then proceed to remove the injured disc material. Once the discectomy is completed a cage or bone is placed in between the vertebral bodies. Titanium plates are then inserted through the cage to stabilize the segment.

Most patients can go home after one to two days.