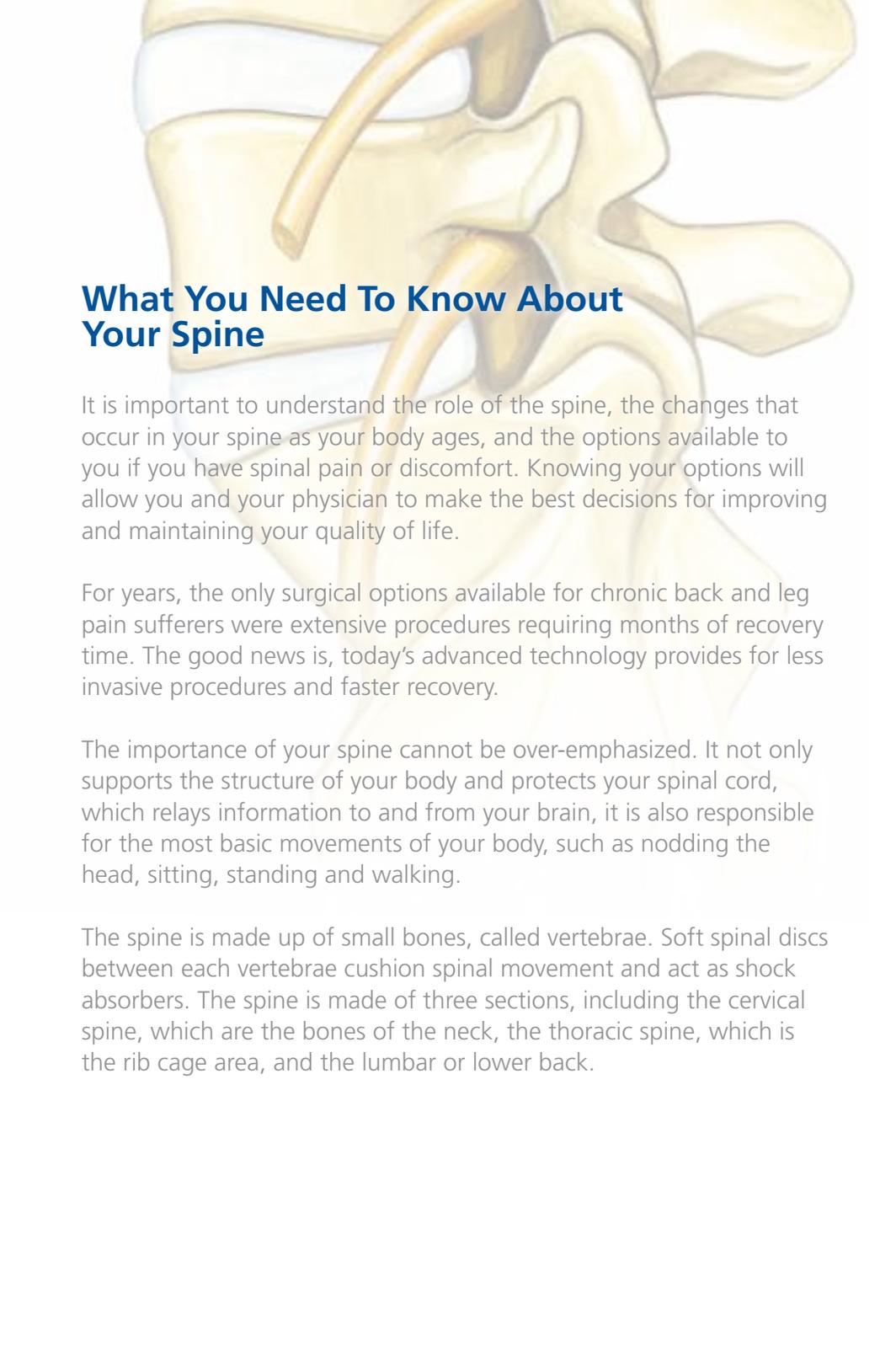




**PARADIGM SPINE**  
*the movement in spine care*



*Treatment Concepts for*  
**Degenerative Spinal Diseases**



## What You Need To Know About Your Spine

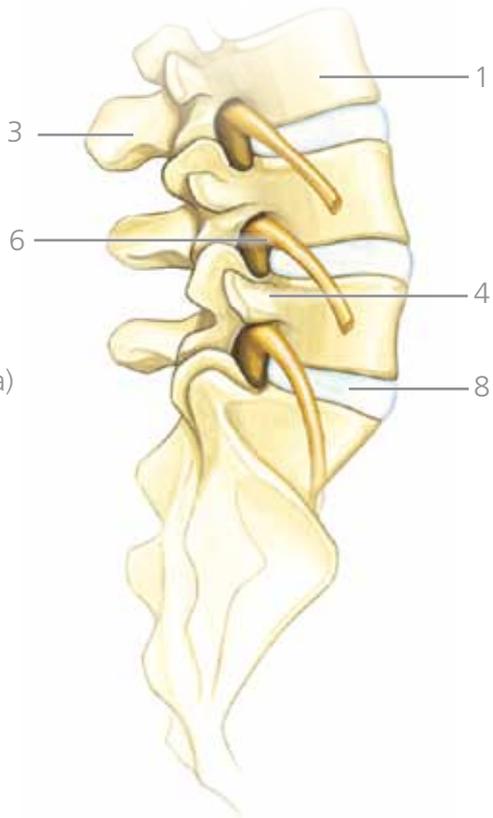
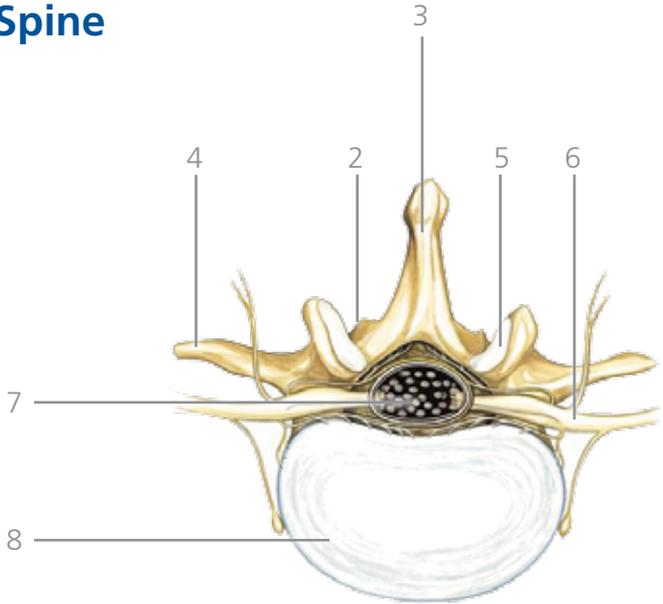
It is important to understand the role of the spine, the changes that occur in your spine as your body ages, and the options available to you if you have spinal pain or discomfort. Knowing your options will allow you and your physician to make the best decisions for improving and maintaining your quality of life.

For years, the only surgical options available for chronic back and leg pain sufferers were extensive procedures requiring months of recovery time. The good news is, today's advanced technology provides for less invasive procedures and faster recovery.

The importance of your spine cannot be over-emphasized. It not only supports the structure of your body and protects your spinal cord, which relays information to and from your brain, it is also responsible for the most basic movements of your body, such as nodding the head, sitting, standing and walking.

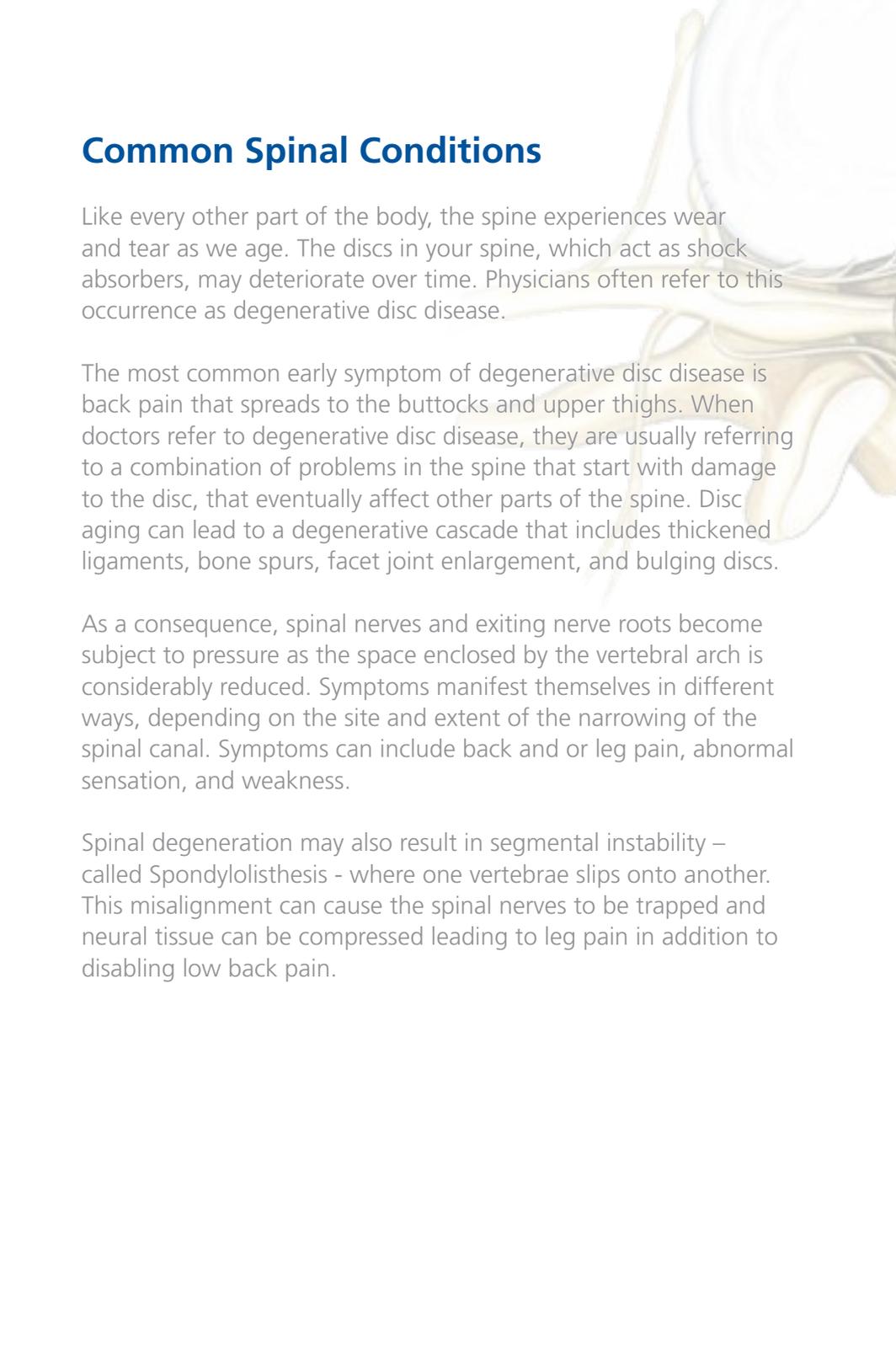
The spine is made up of small bones, called vertebrae. Soft spinal discs between each vertebrae cushion spinal movement and act as shock absorbers. The spine is made of three sections, including the cervical spine, which are the bones of the neck, the thoracic spine, which is the rib cage area, and the lumbar or lower back.

# Lumbar Spine



- 1- Vertebral body
- 2- Vertebral arch (lamina)
- 3- Spinous process
- 4- Transverse process
- 5- Facet joint
- 6- Nerve root
- 7- Spinal canal
- 8- Intervertebral disc

## Common Spinal Conditions



Like every other part of the body, the spine experiences wear and tear as we age. The discs in your spine, which act as shock absorbers, may deteriorate over time. Physicians often refer to this occurrence as degenerative disc disease.

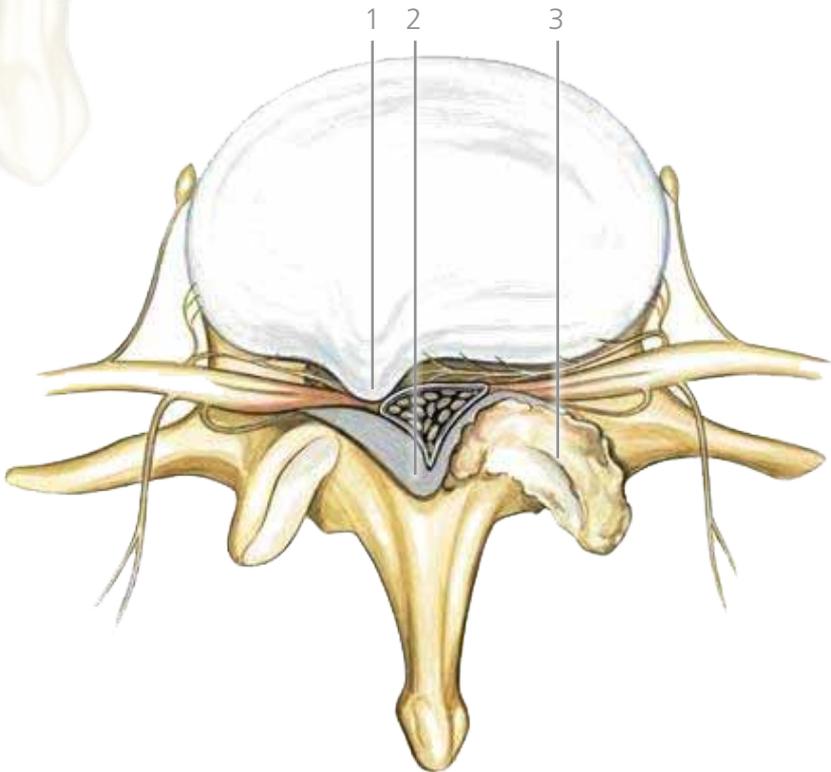
The most common early symptom of degenerative disc disease is back pain that spreads to the buttocks and upper thighs. When doctors refer to degenerative disc disease, they are usually referring to a combination of problems in the spine that start with damage to the disc, that eventually affect other parts of the spine. Disc aging can lead to a degenerative cascade that includes thickened ligaments, bone spurs, facet joint enlargement, and bulging discs.

As a consequence, spinal nerves and exiting nerve roots become subject to pressure as the space enclosed by the vertebral arch is considerably reduced. Symptoms manifest themselves in different ways, depending on the site and extent of the narrowing of the spinal canal. Symptoms can include back and or leg pain, abnormal sensation, and weakness.

Spinal degeneration may also result in segmental instability – called Spondylolisthesis - where one vertebrae slips onto another. This misalignment can cause the spinal nerves to be trapped and neural tissue can be compressed leading to leg pain in addition to disabling low back pain.

## Degenerative Spine

- 1 – Bulging disc
- 2 – Thickened yellow ligament
- 3 – Facet joint osteoarthritis



## Non-Surgical Treatments

Surgery is not the only option for easing back pain. You may want to talk to your physician about the likelihood of success with the following methods before considering surgery.

**Weight loss** is an option of reducing the effects of spine issues. Achieving and maintaining a healthy weight can greatly impact the amount of stress placed on the spine; however, participating in high impact exercise in order to lose weight can do more harm than good. Swimming and aerobics are healthy, low-impact activities to consider when trying to lose weight.

**Chiropractic care or physical therapy** are other options. Working with a physical therapist or a chiropractor, you can develop a routine of exercises or chiropractic visits to strengthen or stretch the muscles in your back. These exercises can greatly reduce back and/or leg symptoms.

**Anti-Inflammatory medication** may be either prescription or non-prescription drugs that reduce pain and inflammation by relieving pressure on compressed nerves. Your physician can determine if this method is right for you.

Finally, **cortisone injections** often temporarily reduce pain and inflammation by injecting medicine into the epidural space, which relieves pressure on the nerves. Again, your physician can determine if this method is right for you.

### *Surgical Options To Discuss With Your Physician:*

If you have been diagnosed with degenerative disc disease and/or spondylolisthesis and non-surgical options did not work for you, you may want to discuss the following option with your physician.

## Lumbar Spinal Fusion

In instances where non-surgical options did not work for you, your surgeon may discuss a lumbar spinal fusion. A spinal fusion is a solid bridge of bone which eliminates motion that normally would take place at the disc space and in the joints of the spine that are causing the pain.

Frequently, instrumentation and implants such as pedicle screws and rods are used in these cases. These implants act as an internal brace to stabilize your spine while the bone fusion grows.



## How The *coflex-F*<sup>®</sup> Implant Works

As an alternative to pedicle screws and rods, your surgeon may suggest the *coflex-F*<sup>®</sup> implant for you. The *coflex-F*<sup>®</sup> implant is a minimally invasive lumbar fusion device that can be inserted through a small skin incision in the back. The implant is intended to stabilize the spine in conjunction with an interbody cage. The *coflex-F*<sup>®</sup> implant is sized to fit between the lamina and is attached to the spinous processes by rivets (see picture below). This interlaminar stabilization allows the body to heal and the spine to fuse in the intended segment.



The implant is made of titanium and is available in a variety of sizes to fit precisely to your anatomy.



## Why Is The *coflex-F*<sup>®</sup> Shaped Like A "U"?

Due to its unique "U" design the *coflex-F*<sup>®</sup> implant can be placed between the two laminae, which are the strongest bones of the posterior spine. At the same time the implant covers a large surface area which allows for optimal load distribution and stable fixation. The *coflex-F*<sup>®</sup> device can help relieve symptoms by limiting how far back you are able to arch, as well as decrease the abnormal motion at the painful spinal segment. This device helps improve the ability to surgically decompress your nerves and relieve the back and leg pain you are experiencing.

# Frequently Asked Questions About Lumbar Spinal Fusion:

## When is surgery necessary?

Surgery is considered when non-surgical therapy fails to adequately control the symptoms of pain, weakness or nerve dysfunction, and if symptoms become disabling. Generally, the need for surgery is a quality of life decision, not a life or death decision. Your surgeon will work with you to customize a treatment plan.

## How does a fusion improve my pain?

It is believed that pain originates in levels of the spine where the bones are slipped or the discs or joints are damaged. This may be due to irritated nerve endings around the disc, bone, or joints, or it may be due to actual entrapment of the spinal nerves in that region. By eliminating motion across the damaged level, pain can be improved. The fusion is designed to eliminate motion in that fused segment of the spine, thereby decreasing back pain created by motion.

## Will a fusion prevent me from bending?

Ninety-five percent of all bending, in terms of being able to touch your toes, involves your hip joints, not your spine. Thus, patients undergoing a lumbar fusion typically have no loss of ability to touch their toes. If more than two levels of the spine are fused, there is some permanent loss of motion, but again, more than 95% of all the flexion occurs at the hip joints, not the spine. Stretching the muscles around the pelvis and hips cannot be over-emphasized.

## Why *coflex-F*<sup>®</sup> over pedicle screws?

Pedicle screws often require a more extensive dissection. The *coflex-F*<sup>®</sup> implant is intended to be less invasive compared to traditional pedicle screw fixation. It provides significant segmental stability and posterior fixation. The implant design allows for a tissue-sparing insertion with a smaller skin incision, reduced blood loss and reduced muscle trauma. The neural structures are protected and complications encountered with conventional pedicle screw systems can be avoided. Due to the less invasive surgical technique, the operating time can be reduced, leading to a faster rehabilitation after surgery.





## Recovery From *coflex-F*<sup>®</sup> Spinal Surgery

The length of your hospital stay and the amount of physical therapy required afterwards can only be determined by your doctor. Many patients leave the hospital the day following insertion of a *coflex-F*<sup>®</sup> implant. Your surgeon will recommend a rehabilitation program that is appropriate for your specific condition. You should avoid extensive lifting, twisting and bending for a minimum of six weeks. The amount of pain following surgery varies between patients, but narcotic medications are often required for several weeks following surgery.



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