Degenerative Disc Diseases

- Back pain is a significant problem in the U.S. According to the American Association of Neurological Surgeons, an estimated 75 to 85 percent of all Americans will experience some form of back pain during their lifetime.¹

- A common cause of low back pain is degenerative disc disease in the lower, or lumbar, spine where a compromised disc can cause loss of normal structure and function, low back pain, and radiating weakness and/or numbness.

- Disc degeneration can occur due to simple wear and tear as a natural part of aging, or may result from trauma.

- Unlike other body tissues, once injured, a spinal disc can’t repair itself because it has only minimal blood supply. As a result, a minor injury to a disc can create a “degenerative cascade” where the disc fails.²

- According to Spine-Health.com, at least 30 percent of people 30 to 50 years of age will have some degree of disc degeneration, although not all will have pain or receive a formal diagnosis.²

- For patients age 60 or older, some level of disc degeneration can be considered a normal finding on an MRI scan, rather than an exception.²

- Disc degeneration can lead to additional spinal problems such as degenerative spondylolisthesis (spon-dee-low-lis-thee-sis), a condition in which one vertebral body slips forward on another. In fact, spondylolisthesis is Latin for “slipped vertebral body.”

Diagnosis & Treatment

- Diagnosis of degenerative disc disease requires a three-part process involving recording a patient’s medical history, conducting a physical exam, and reviewing an MRI scan of the spine.

- Many people with degenerative disc disease can be treated with medication, heat and/or ice, physical therapy, and exercise to control the pain and inflammation.

- If conservative treatment does not provide sufficient pain relief, spinal fusion surgery may be recommended. This includes lumbar interbody fusion, a surgical procedure performed by approaching the spine through the lower back with the aim of reducing pain by joining two adjacent vertebrae so that there is very little movement between them.
• In lumbar interbody fusion procedures, the disc space is cleaned of disc material and an interbody device, or “cage,” along with a bone graft, is inserted into the disc space. The cage helps restore and maintain normal spacing between the vertebrae to stabilize the spine while the bones grow together, fusing that section of the spine. The surgeons also will implant supplemental spinal fixation systems that have been cleared by the FDA for use in the lumbosacral spine, such as pedicle screws, rods, or plates.

• Patients typically remain in the hospital three to four days following spinal fusion, depending on their overall physical condition and progress following surgery.\(^3\)

• Surgeons monitor the success of a patient’s spinal fusion via imaging such as a CT scan or X-ray. Early fusing may take up to six weeks, and full recovery from spinal fusion may take three to six months.\(^3\)

**New Tritanium® Posterior Lumbar Cage**

• Traditionally, cages used in lumbar interbody fusion procedures have been made of allograft bone (donated bone from a bone bank) or materials such as carbon fiber, PEEK (polyetheretherketone polymer), or titanium.

• Surgeons now have the option of using devices made from a novel, highly porous titanium alloy for lumbar interbody fusion procedures.

• The Tritanium PL Cage from Stryker’s Spine division received 510(k) clearance from the U.S. Food and Drug Administration in November 2015 for use in skeletally mature patients with degenerative disc disease, as well as Grade 1 spondylolisthesis and degenerative scoliosis.

• The Tritanium PL Cage is created using an advanced additive manufacturing technology, also known as 3D printing. In contrast to traditional manufacturing methods, 3D additive manufacturing is a process that creates three-dimensional objects by adding layer upon layer of material.

• Guided by special computer-aided design software, a focused laser beam melts layers of metal particles, essentially “growing” the device from the bottom up. The technology gives Stryker the ability to create unique porous structures from a material that resembles cancellous bone, a type of spongy bone tissue.

• The Tritanium PL Cage is created using Stryker’s proprietary Tritanium in-growth technology and is designed to fit within the disc space and aid in spinal fusion.

• The Tritanium PL Cage represents an important advancement in lumbar spinal fusion. The Tritanium in-growth technology is a highly porous titanium material designed for bone in-growth and biological fixation.

• The Tritanium PL Cage was designed to allow visualization on CT and X-ray, to minimize subsidence into the vertebral body endplates, and to improve stability within the disc space.

• The Tritanium PL Cage is the first Tritanium product introduced for spinal surgery, and additional Tritanium-based spinal surgery products are anticipated.
About Stryker

Stryker is one of the world’s leading medical technology companies and, together with our customers, we are driven to make healthcare better. The Company offers a diverse array of innovative products and services in Orthopaedics, Medical and Surgical, and Neurotechnology and Spine that help improve patient and hospital outcomes. Stryker is active in over 100 countries around the world. For more information, visit www.stryker.com.

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Editor’s note: For images, video footage, or animation of Tritanium products and Stryker’s 3D manufacturing process, contact Barbara Sullivan at 714/374-6174 or bsullivan@sullivanpr.com.

References


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