CSG CHIROPRACTIC SOLUTIONS GROUP
The Trusted Spine and Nerve Clinic

Is Your Back Pain From Degenerative Disc Disease (DDD)?

What do you need to know about the Disc?

The intervertebral disc is a structure located between the spinal segments (vertebrae). See Figure 1.

The primary purpose of the intervertebral disc is to serve as the spine's shock absorbing system. The discs also act as ligaments that hold the vertebrae of the spine together.

The intervertebral disc has two components- the nucleus pulposus (inner part) and the strongest portion, annulus fibrosus (outer part). See Figure 2.

FIGURE 1. Intervertebral Disc View

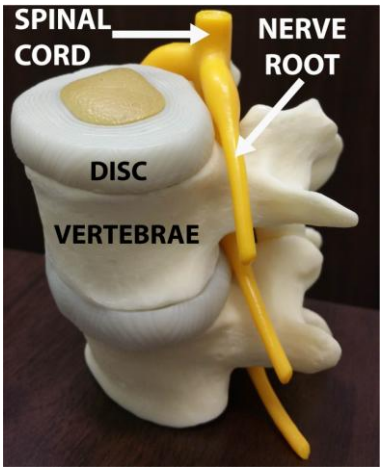
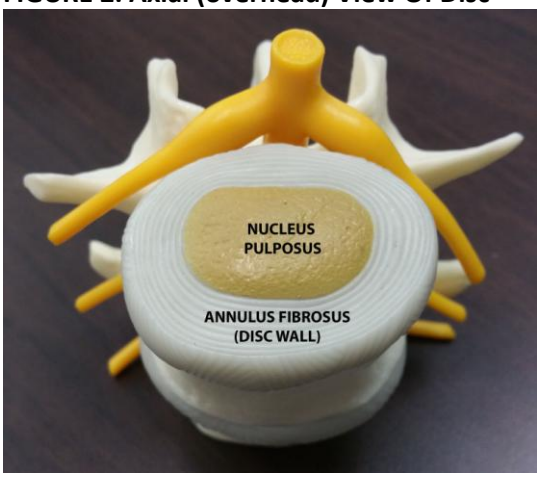


FIGURE 2. Axial (overhead) View Of Disc



Having the consistency of a semi-liquid gel (90% water in infancy), the nucleus pulposus when well hydrated, offers resistance to compressive forces and properly distributes the load through the annulus fibrosus. The water content in the nucleus diminishes with age due to **disc degeneration**, but the progression is usually slow. However, degenerative changes in the disc can be accelerated by a variety of environmental factors, such as dysfunction in the biomechanics of the spine. The most common factor that results in degenerative disc disease is acute and chronic repetitive spinal trauma, eg. Poor postural habits, lifting sprain/strains. Before age 40, studies have shown that approximately 25% of people show evidence of disc degeneration at one or more levels. When a disc is dehydrated, it is essentially an impaired disc functionally, because the hydration status of the disc is important to its mechanical behavior.

Let's explain this further…

 Tel: **(65) 6789 8515** E: **drpang@chirosolutionsgroup.com**

A dehydrated disc is rigid and is unable to distribute the load evenly through the disc. This means that even normal forces from activities of daily living have the ability to produce tears in the disc wall (annulus fibrosus) due to the lack of ability to function effectively as a shock absorber. See Figure 3. When the disc tear heals, they form scar tissue that is not as strong as the original disc fibers. If the back is repeatedly injured, eg. Repeated vertebral trauma, the process of tearing and scarring may continue to weaken the disc wall. See Figure 4.

FIGURE 3. Annular Tear

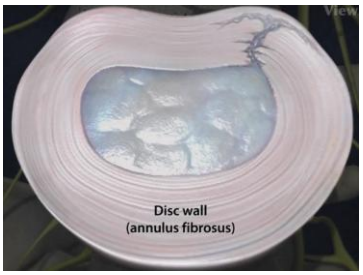
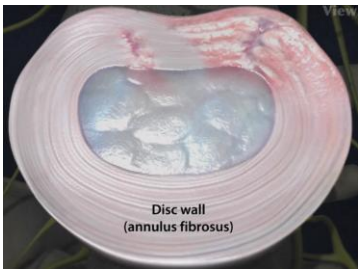


FIGURE 4. Scar Tissue



These tears provide the means through which the nucleus pulposus may progressively migrate (herniate) toward the outer margin of the annulus where there is a nerve supply and provoke pain. Disc herniation is often referred to as Slipped-Disc by the lay public. See Figure 5. A ruptured disc or prolapsed disc represents nuclear disc material that is not contained by the outer fibers of the annulus fibrosus.

FIGURE 5. Disc Herniation; Contained Disc

Clinical Features of Degenerative Disc Disease

Degenerative discs don't necessarily cause any pain. It is very common to see a degenerative disc on MRI that is totally asymptomatic. When a disc causes pain, it is because there is a tear in the disc, and the inflammatory chemicals inside of the disc have irritated the outer margins of the disc wall where there are pain sensitive nerves. This secondary inflammatory response is explained below. **Studies have shown that chiropractic adjustments can alter these chemical changes to explain the reduction of symptoms that can occur in disc lesion**.

Specific problems, such as disc herniation with any of the 23 vertebral discs in the spine, may prompt different symptoms, including back pain, neck pain and sciatica.

Disc herniations can cause radiating pain through two mechanisms; mechanical compression of the spinal nerve root and secondary inflammatory response following the migration of the nucleus toward the pain sensitive outer annular fibers of the disc.
The mechanical compression may produce local nerve root impingement, inducing symptoms such as:
-Pain, numbness or tingling in the legs
-Strong pain tends to come and go
-Bending, twisting and sitting may worsen pain
-Lying down relieves pressure

The symptoms of bowel and bladder incontinence, sensory disturbance, and motor weakness in the lower extremities suggest the presence of cauda equina syndrome and warrant immediate neurosurgical referral.

The Cauda Equina Syndrome – Seek urgent medical help!

-Rectal or genital sensory changes
-Back pain or perianal anesthesia
-Difficulty with urination, consisting of frequency or overflow urination
-In males, recent impotence
-Leg pain may occur and progress to numbness of the feet and difficulty in walking
-Sudden severe paraplegia

How can Chiropractic care help?

Chiropractic can often relieve symptoms of Degenerative Disc Disease, but it does not reverse or cure the condition.

Let's understand the mechanism of how Chiropractic Adjustments help…

As a person bends and twists their spine throughout the day, the discs get pumped. This process is called imbibition. This pumping allows old fluid (metabolic waste) to leave the disc and new fluid to enter in. Now when there is lack of motion (pumping action) to the disc due to dysfunction to the mechanics of vertebral joints, the disc will gradually dehydrate due to poor fluid exchange (loss of imbibitions). A chiropractor can detect abnormal vertebral joint motion and with safe and non-invasive spine adjustment techniques, are able to improve function to the mechanical behavior of the disc. This helps to slow down the degeneration, because one of the only proven ways to improve the flow of fluid into and out of the disc is through physical motion.

An equally important treatment goal is unloading the pressure on the disc to allow the disc lesion to heal. This focuses on **restoring proper spinal alignment** and **posture**.

In rare instances when discs aren't responding to more conservative chiropractic care and the pain is just persisting and is interfering with quality of life, it is certainly appropriate to have a conversation with a spinal surgeon about surgical alternatives.

What Should You Do?

1. **Maximized nutrition**-hydration. Make sure you are continuously well hydrated through the day to nourish the spinal discs! Remember the disc is largely water based so this is vitally important.
2. **Maximize movement**. This movement creates the pump effect allowing the nutrients to flow in and wastes to flow out. This supports proper function of your discs. In other words, avoid prolonged hours of sitting or standing, and sedentary lifestyle.
3. **Maximize rest**. Are you getting enough hours of sleep? Do you get good quality sleep? Do you have a good supportive mattress and pillow for your spine so that your discs can be stress-free and have the opportunity to relax, rejuvenate and heal? What about your sleep position?
4. **Maximize core strength** and stability. Doing abdominal and back exercises are important components for good spine health. Learn how to do the exercises properly and safely so as to avoid aggravation to your disc condition.
5. **GET A FULL ASSESSMENT OF THE HEALTH OF YOUR SPINE**! Abnormal spinal motion and altered spinal alignment (balance) is associated with Degenerative Disc Disease, and could be the cause of your back pain. Addressing poor spinal function quickly can mean a faster recovery time and less health concerns in the future.

Yours in health,

Dr. Allan Ng and **Dr. Richard S.W. Pang**
Doctor of Chiropractic (Australia)
Owners and Founders of CSG

 Tel: **(65) 6789 8515** E: **drpang@chirosolutionsgroup.com**