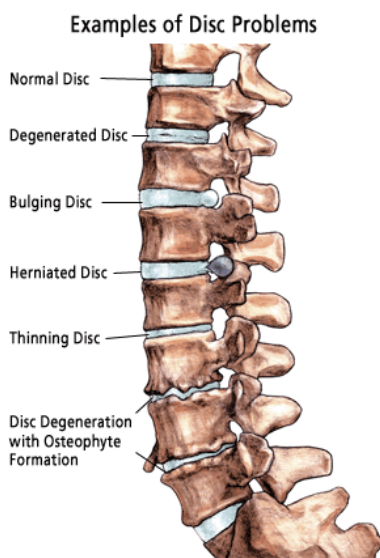


Degenerative Disc Disease

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You don't actually have to be that old in order to have back problems. Degenerative disc disease (DDD) may affect people under twenty, but typically presents in older people. The name itself can be misleading, as this condition is not really a disease, and it is not always degenerative in nature. While younger people may have premature degenerative spine problems, a disc may become painful due to a lifting or torsional injury.



If you have chronic neck or back pain, you may have degenerative disc disease. This condition usually is degenerative, caused by a normal wear and tear process that ages your spine. We don't know why some people are more affected than others, but heredity seems to be a big factor. Other things such as work type, smoking, body weight, and lifestyle also have been implicated.

As we age, the intervertebral discs (the cushiony pads between the bones in one's spine) begin to lose their water content, as well as their flexibility, elasticity, and shock-absorption characteristics. As this occurs, our backs change from a supple, flexible state to a stiff rigid state which limits our movement. The discs may become thinned out and more prone to herniating. Bony spicules called osteophytes may occur. These osteophytes or disc protrusions may pinch a nerve, causing referred pain to an arm or a leg.

People with degenerative disc disease generally have ongoing neck or back pain, with occasional flares which often are described as being "down in the back", or having their back "go out". DDD can affect any part of the spine. Pain usually occurs in an area of gradual disc deterioration.

Common Symptoms of DDD:

- Diffuse pain in the neck or back, typically not radiating into arms or legs
- Pain worse with sitting than standing, but also with bending, lifting or twisting
- Less pain with frequent movement or with lying down

It is important to take care of your neck and back. Seek medical attention if your pain persists. If any of the warning signs below occur, get help immediately.

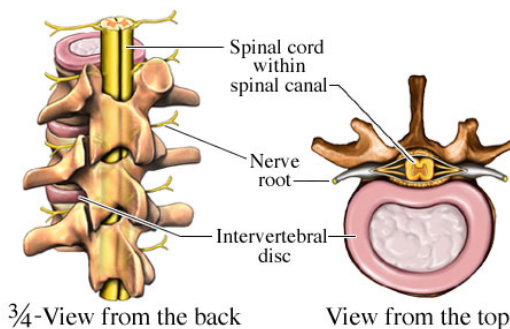
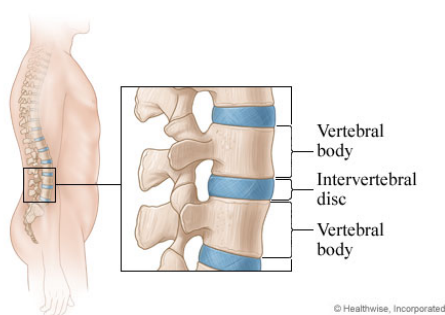
Signs Requiring Immediate Evaluation:

- Worsening, disabling pain
- Loss of bowel or bladder control
- Leg weakness or pain

Spinal Anatomy

To better understand your back pain and some of its causes, you first need to know something about the origin of the problem. The spinal column is made up of 25 separate bones called vertebrae, which are stacked one upon another. Shock-absorbing discs separate each block-like bony vertebra. Each disc has a tough tire-like outer band which is called the annulus fibrosis. The middle portion of the disc is composed of a gel-like substance called the nucleus pulposus. Like other parts of the body, each intervertebral disc has a nerve supply—the annular nerves. The nucleus pulposus does not have nerves, but the outer third of the annulus fibrosis does.

The discs and vertebrae make up the front part of the spinal column. To the rear, bony projections of each vertebrae form a circle through which the spinal cord runs. Thus, the spinal canal lies just rearward of the discs and vertebral bodies, and is protected by a ring of bones. These bony vertebral rings hinge upon one another by means of joints, called the facet joints. At each vertebral level, a pair of spinal nerves exits the spinal column, through a channel called the neuroforamen. Each foraminal opening runs just in front of its corresponding facet joint.



Your spine is built like the mast of a tall ship, with many strong ligaments providing structural support. Strands of muscles provide power to move the spine, and help hold it stable. Blood vessels provide nourishment to the parts of the spine, including bones and discs. If something goes wrong with the orchestrated performance of the spine, it can result in painful DDD.

When Things Go Wrong: Causes of DDD

Degenerative disc disease can come on with an injury to the back, or it can be associated with aging. Often it is a combination of age and an inciting factor that causes asymptomatic DDD to become symptomatic. Long before symptoms occur, cellular and biochemical changes have already occurred. Over time, the disc loses its water content and becomes less pliable and more prone to injury. Some of these changes can be seen on imaging tests (computer aided views of your body) before significant pain due to disc disease becomes evident. Eventually, symptoms may begin when sufficient inflammation or anatomic changes occur. For example, a dried-out disc may tear, causing pain to arise from the disc itself.

When a degenerated disc suddenly collapses or gradually thins, the neuroforaminal size often decreases to a point where the exiting nerve root is compressed, causing pain in arms or legs, called radiculopathy. Narrowing of the spinal canal itself may occur due to degenerative enlargement of facet joints or overlying ligaments. This narrowing is called stenosis. Stenosis can put pressure on the nerves in the low back or neck, causing pain in one's leg or arm. Another way nerves can become irritated is by chemical inflammation. Substances causing inflammation can seep out from injured discs or arthritic facet joints. When these chemicals touch a spinal nerve, pain, numbness, or tingling is transmitted or "referred" to the associated arm or leg. Thus, "nerve pain" traveling into one's arm or leg may be due to nerve pinching, or due to inflammation. It usually involves both.



Diagnosing Degenerative Disc Disease

Call your spine specialist if you have persisting, changing, or suddenly worsening low back pain. Your physician will try to locate the cause of the problem in order to develop a treatment plan for you—a way to manage the symptoms of degenerative disc disease and to help restore your back health.

Your doctor will ask questions about your condition. He or she will typically ask the following questions:

- When did the low back pain begin?
- Was there an obvious triggering event?
- What have you or other health care providers done for your low back pain?
- Where does it hurt?
- Is there pain radiating to other parts of the body?
- What makes your pain better or worse?

A physical exam will typically include a neurologic exam, checking for reflexes, muscle strength, and other nerve changes. Signs of nerve root tension can be checked by performing a straight leg raise. The exam will include observation of posture, motion, muscle symmetry and bulk, and spinal curvature and alignment. Hip or shoulder examination may be done, as problems here need to be differentiated from spinal disorders. Tenderness or tension in the muscles may be noted.

Blood tests may be done to check for signs of blood cell normalcy, and to look for indicators of infection or other medical problems.

Other diagnostic studies may include:

- X-Rays (radiographs) of the spine, hips and shoulders. Spinal radiographs don't show discs, but can show diminished disc space height that suggests a disc is abnormal. Arthritis, fractures, and bony spurring may be seen.
- Computerized Tomography (CT) Scanning or Magnetic Resonance Imaging (MRI) can show protrusions (bulges) or other disc findings.
- Bone Scan can be a sensitive indicator of arthritis, infection and fracture, as well as various diseases affecting the bone.
- Electromyography and Nerve conduction studies (EMG/NCS), commonly referred to as "EMG", can be useful if your doctor suspects nerve damage. This test can tell if the nerves are conducting normally, and if the muscles are receiving proper nerve supply.
- Discogram or discography can be used to evaluate the discs. Dye is placed within the discs in a sterile manner to see which disc(s) are causing pain.

Non-surgical Treatments for Degenerative Disc Disease

Degenerative disc disease is common in middle-age adults, and present to some degree in most older adults. It rarely requires surgery. Usually, an episodic flare of low back pain due to DDD will run its course in six to eight weeks. When medical care is needed, the vast majority of patients respond to non-operative care.

Bed rest may be used in the initial few days of a flare, but is no longer recommended for extended periods of time.

Narcotic pain relievers may be used for a short pain flare, but are usually avoided for longer-term use. Non-steroidal anti-inflammatory drugs (NSAIDs) are available in both over-the-counter and prescribed forms, but may increase the risk of gastrointestinal ulceration or other problems, and should best be used with knowledge of one's primary care physician. Muscle relaxants may cause excessive drowsiness, but may help a person get a good night's sleep. Anti-depressant medications may be useful as pain relievers, even at doses too low to bring about changes in mood.

Spinal injections generally are more helpful in people with radiating arm or leg pain, but may be useful for non-radiating neck or low back pain associated with degenerative disc disease. If performed by an experienced physician, spinal injection procedures are very safe.

Physical therapy can be one of the most effective helps for your low back pain. By providing a stretching and aerobic exercise program, and helping core muscles and ligaments that stabilize the spine, a physical therapy program can help end a current pain flare or decrease the likelihood of future problems. Thus, one can gain an independent back program that can be carried on for a lifetime. A chiropractor may provide gentle adjustments in an effort to restore spinal function and comfort. Modalities may be provided in a physical therapy or chiropractic office, but usually these passive forms of treatment are better at providing immediate comfort than long-lasting benefit.

Surgical Treatments for Degenerative Disc Disease

For most patients with DDD, non-operative treatment will be all that is necessary. If this gives you insufficient relief, consultation with a surgeon can usually be arranged. If an operation is proposed, always ask about expected outcome and associated risks.