

Physical Therapist's Guide to Degenerative Disk Disease

It's estimated that as many as 75% of us will have some form of back or neck pain at some point in our lifetime. **The good news is that most of us will recover without the need for surgery—and conservative care such as physical therapy usually gets better results than surgery.** Degenerative disk disease (DDD) is one cause of back and neck pain. Usually the result of the natural aging process, degenerative disk disease (DDD) is a type of osteoarthritis of the spine.

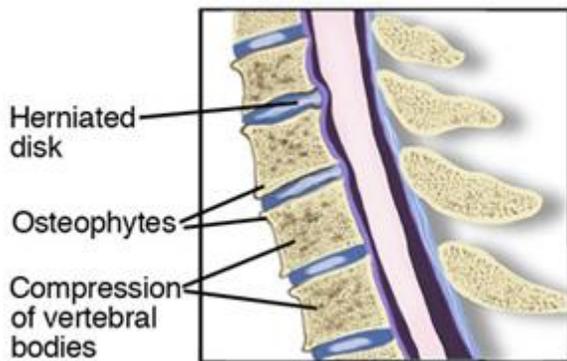
What Is Degenerative Disk Disease?

Your spine is made up of 33 vertebrae that are stacked on top of one another. Between each of these vertebrae is a rubbery piece of cartilage called an "intervertebral disk." (See images: [Degenerative Disk Disease - Cervical](#) | [Lumbar](#)) Imagine the disk as a tire, with gelatin filling the hole in the tire. The tire is called the "annulus," and the gelatin is called the "nucleus." When we're young—under 30 years of age—the disk is made mostly of gelatin. As we age, and sometimes with injury or excessive wear and tear, we start to lose some of that gelatin, and the volume of the disk decreases, resulting in less space between the vertebrae. The disk becomes flatter and less flexible, leaving less space between each set of vertebrae. Sometimes bone spurs form in response to this degeneration of the disk, making the spine stiff. When the rough surfaces of the vertebral joints rub together, pain and inflammation may result.

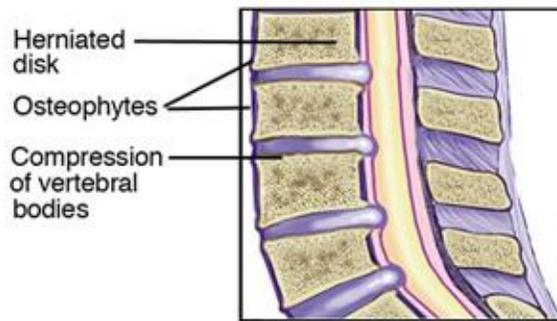
Nerves may become irritated or compressed. Disk degeneration might occur throughout several regions of the spine, or it might be limited to one disk. When it's part of the natural aging process, the degeneration does not always lead to pain. For some people, however, it can cause a great deal of pain and disability.

You are more likely to develop DDD if you:

- Smoke
- Are obese
- Do heavy physical work
- Don't get very much exercise



Cervical Degenerative Disk Disease:



Lumbar Degenerative Disk Disease:

How Does it Feel?

You might have mild to intense neck and back pain—or no pain at all:

- A degenerative disk in the neck can cause pain in the arm, shoulder, or neck
- A degenerative disk in the low back might cause pain in the back, buttocks, or legs

The pain is often made worse by sitting, bending, and reaching. It may be worse first thing in the morning and after staying in any one position for a long time.

In severe cases, when DDD results in pressure on the nerves, it can lead to numbness, tingling, and even weakness in the arms or legs.

How Is It Diagnosed?

Your physical therapist will conduct a thorough evaluation that includes a review of your medical history and will use screening tools to determine the likelihood of DDD. For example, the therapist may:

- Ask you very specific questions about the location and behavior of your pain, weakness, and other symptoms
- Ask you to fill out a body diagram to indicate specific areas of pain, numbness, and tingling
- Perform tests of muscle strength and sensation to determine the severity of the pressure on your nerves
- Examine your posture and observe how you walk and perform other activities
- Measure the range of motion of your spine and your arms and legs
- Use manual therapy to evaluate the mobility of the joints and muscles in your spine
- Test the strength of important muscle groups

If you have muscle weakness and loss of sensation or very severe pain, special diagnostic tests, such as x-rays, may be needed. Physical therapists work closely with physicians and other health care providers to make certain that an accurate diagnosis is made and the appropriate treatment is provided.

Research shows that in all but the most extreme cases (usually involving muscle weakness or high levels of pain), conservative care, such as physical therapy, has better results than surgery.

After the evaluation, if your therapist suspects you have DDD and there are no major medical problems, treatment can begin right away.

How Can a Physical Therapist Help?

Your physical therapist's overall purpose is to help you continue to participate in your daily activities and life roles. The therapist will design a treatment program based on both the findings of the evaluation and your personal goals. The treatment program likely will be a combination of exercises.

Relieve Pain and Increase Movement

Your therapist will design:

- Stretching and flexibility exercises to improve mobility in the joints and muscles of your spine and your extremities—improving motion in a joint is often the key to pain relief
- Strengthening exercises—strong trunk muscles provide support for your spinal joints, and strong arm and leg muscles help take some of the workload off your spinal joints
- Aerobic exercise, which has been shown to be helpful in relieving pain, promoting a healthy body weight, and improving overall strength and mobility—all important factors in managing DDD

This might sound like a lot of exercise, but don't worry: research shows that the more exercise you can handle, the quicker you'll get rid of your pain and other symptoms.

Your physical therapist also might decide to use a combination of treatments:

- Manual therapy to improve the mobility of stiff joints and tight muscles that may be contributing to your symptoms
- Posture and movement education to show you how to make small changes in how you sit, stand, bend, and lift—even in how you sleep—to help relieve your pain and help you manage your condition on your own
- Special pain treatments—such as ice, electrical stimulation, or a short course of traction—for pain that is severe and not relieved by exercise or manual therapy

Once your pain is gone, it will be important for you to continue your new posture and movement habits to keep your back healthy.

Can this Injury or Condition be Prevented?

DDD usually is a natural result of aging. Research has not yet shown how to prevent it—but you *can* make choices that lessen its impact on your life and slow its progression. Many physical therapy clinics conduct regular educational seminars to help people in the community learn to take care of their backs and necks. These seminars often are free and provide demonstrations along with written information about exercises for the back and neck, instruction on proper lifting and sitting postures, and other tips to keep your back healthy.

Your physical therapist can help you develop a fitness program that takes into account your DDD. There are some exercises that are better than others for people with DDD, and your therapist will educate you about them. For instance:

- Exercising in water can often be a great way to stay physically active when other forms of exercise are painful.
- Exercises involving lots of twisting and bending need to be avoided in some individuals.
- Weight training exercises, though very important, need to be done with proper form to avoid stress to the back and neck.

Real Life Experiences

Jim W. is a 52-year-old construction worker who has been diagnosed with DDD. This is not the first time he has had pain, but it's the first time the pain is bad enough for him to seek treatment. His neighbor recommended a physical therapist in his community who had helped her with her back problem.

Jim's pain initially was in his low back, but now the pain is spreading down the back of his thigh and into his knee. He has some numbness and tingling but no weakness. His pain is worse with sitting and bending. He is currently unable to sit for more than 10 minutes without experiencing both back and leg pain. Except for the physical work he does on the job, Jim gets no regular exercise. He is 20 pounds overweight.

Jim's physical therapist performs a thorough evaluation and asks him many questions about his health, his pain, and his lifestyle. She uses tests to determine the severity of his condition and evaluates the strength of his muscles and the mobility of the joints of his back.

During Jim's first treatment session, the physical therapist:

- Explains some of the reasons for his problem and discusses the importance of special exercises to relieve his pain
- Shows him how to manage his pain by making simple changes in how he performs his daily activities, such as the best muscles to use for lifting on the job
- Performs a manual therapy technique to his low back, which completely relieves his back and leg pain
- Gives Jim special exercises to do at home and encourages him to begin a walking program

Jim follows the advice of his physical therapist and, after only 3 weeks, he is free of symptoms. He is committed to a program of regular exercise and activity and has made an appointment to return to his physical therapist in 6 weeks to review his exercise program and make sure that he is staying on track with his program.

This story was based on a real-life case. Your case may be different. Your physical therapist will tailor a treatment program to your specific case.

What Kind of Physical Therapist Do I Need?

All physical therapists are prepared through education and experience to treat people who have DDD. You may want to consider:

- A physical therapist who is experienced in treating people with orthopedic, or musculoskeletal, problems.
- A physical therapist who is a board-certified clinical specialist or who completed a residency or fellowship in orthopaedic physical therapy. This therapist has advanced knowledge, experience, and skills that may apply to your condition.
- You can find physical therapists who have these and other credentials by using [Find a PT](#), the online tool built by the American Physical Therapy Association [www.APTA.org] to help you search for physical therapists with specific clinical expertise in your geographic area.

General tips when you're looking for a physical therapist:

- Get recommendations from family and friends or from other health care providers.
- When you contact a physical therapy clinic for an appointment, ask about the physical therapist's experience in helping people with DDD.
- During your first visit with the physical therapist, be prepared to describe your symptoms in as much detail as possible, and say what makes your symptoms worse.

Further Reading

The American Physical Therapy Association (APTA) believes that consumers should have access to information that could help them make health care decisions and also prepare them for their visit with their health care provider.

The following articles provide some of the best scientific evidence related to physical therapy treatment of degenerative disk disease. The articles report recent research and give an overview of the standards of practice for treatment of DDD both in the United States and internationally. The article titles are linked either to a PubMed abstract of the article or to free full text, so that you can read it or print out a copy to bring with you to your health care provider.

Macedo LG, Maher CG, Latimer J, McAuley JH. Motor control exercise for persistent, nonspecific low back pain: a systematic review. *Phys Ther.* 2009;89:9–25. [Free Article](#).

Beattie PF. Current understanding of lumbar intervertebral disc degeneration: a review with emphasis upon etiology, pathophysiology, and lumbar magnetic resonance imaging findings. *J Orthop Sports Phys Ther.* 2008;38:329–340. [Article Summary on PubMed](#).

Chou R, Qaseem A, Snow V, Casey D, Cross JT, Shekelle P. Clinical Guidelines: Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society. *Ann Intern Med.* 2007;147:478-491. [Article Summary on PubMed](#).

Roh JS, Teng AL, Yoo JU, Davis J, Furey C, Bohlman HH. Degenerative disorders of the lumbar and cervical spine. *Orthop Clin North Am.* 2005; 36:255-262. [Article Summary on PubMed](#).

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