

The word **spondylolisthesis** derives from two parts: *spondylo* which means spine, and *listhesis*, which means slippage. So, a spondylolisthesis is a forward slip of one vertebra (i.e., one of the 33 bones of the spinal column) relative to another. Spondylolisthesis usually occurs towards the base of your spine in the lumbar area.



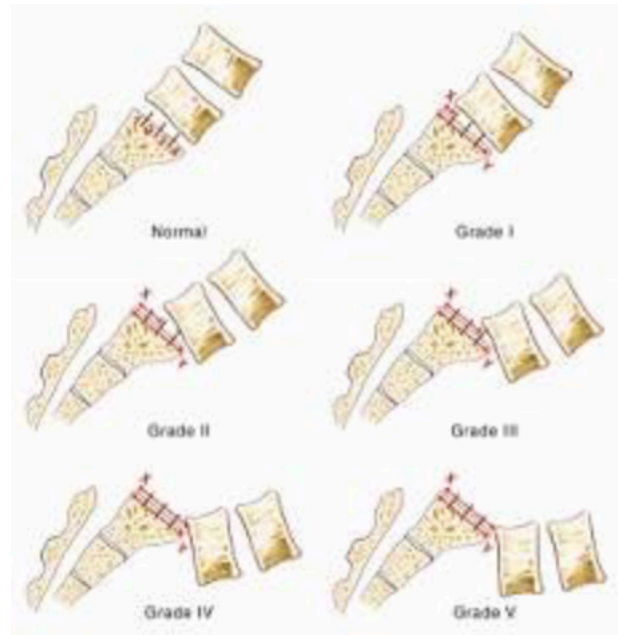
This is an x-ray showing spondylolisthesis in the lumbar spine (lower back). Look at where the arrow is pointing - you can see that the vertebra above the arrow has slid out over the vertebra below it.

Spondylolisthesis Grades

Spondylolisthesis can be described according to its degree of severity. One commonly used description grades spondylolisthesis, with grade 1 being least advanced, and grade 5 being most advanced. The spondylolisthesis is graded by measuring how much of a vertebral body has slipped forward over the body beneath it.

Here is a list of the grades:

- Grade 1: 25% of the vertebral body has slipped forward
- Grade 2: 50%
- Grade 3: 75%
- Grade 4: 100%
- Grade 5: Vertebral body has completely fallen off (i.e., spondyloptosis)



How do People Get Spondylolisthesis?

Approximately 5%-6% of males, and 2%-3% of females have a spondylolisthesis.

It becomes apparent more often in people who are involved with very physical activities such as weightlifting, gymnastics, or football.

Although some children under the age of five may be pre-disposed towards having a spondylolisthesis, or may indeed already have an undetected spondylolisthesis, it is rare that such young children are diagnosed with spondylolisthesis. Spondylolisthesis becomes more common among 7-10-year olds. The increased physical activities of adolescence and adulthood, along with the wear-and-tear of daily life, result in spondylolisthesis being most common among adolescents and adults.

Types of Spondylolisthesis

Different types of spondylolisthesis may be caused in various ways. Some examples are:

- Developmental Spondylolisthesis: This type of spondylolisthesis may exist at birth, or may develop during childhood, but generally is not noticed until later in childhood or even in adult life.
- Acquired Spondylolisthesis: Acquired spondylolisthesis can be caused in one of two ways:
 - With all of the daily stresses that are put on a spine, such as carrying heavy items and physical sports, the spine may wear out (i.e., degenerate). As the connections between the vertebrae weaken, this may lead to spondylolisthesis.
 - A single or repeated force being applied to the spine can cause spondylolisthesis; for example, the impact of falling off a ladder and landing on

your feet, or the regular impact to the spine endured by offensive linemen playing football.

Symptoms of Spondylolisthesis

Many people with a spondylolisthesis will have no symptoms and will only become aware of the problem when it is revealed on an x-ray for a different problem. However, there are several symptoms that often accompany spondylolisthesis:

- Pain in the low back, especially after exercise
- Increased lordosis (i.e., swayback).
- Pain and/or weakness in one or both thighs or legs
- Reduced ability to control bowel and bladder functions
- Tight hamstring musculature
- In cases of advanced spondylolisthesis changes may occur in the way people stand and walk; for example, development of a waddling style of walking. This causes the abdomen to protrude further, due to the low back curving forward more. The torso (chest, etc.) may seem shorter; and muscle spasms in the low back may occur.

Causes of Spondylolisthesis

Spondylolisthesis can be caused by a birth defect, fractures, spondylolysis (a defect or fracture in the pars interarticularis), degeneration due to age or overuse, tumors, and/or surgery.

Doctors have developed a classification system to help talk about the different causes of spondylolisthesis, which are described in further detail on spineuniverse.com.

Treatment, Restrictions, Bracing, & Medication for Spondylolisthesis

The grade of slip (grades 1-5) and the symptoms will help determine the type of treatment that will be suitable. The doctor will consider the following options:

1. No treatment

Approximately 5% of the population has a spondylolisthesis, most of whom will never need any treatment as their spondylolisthesis is stable, and non-progressive. For adults, treatment is only recommended for those patients who have symptoms of pain and disability. For children, treatment is necessary if they have pain, and when the forward vertebral slip is progressing. Observation is adequate for the adult who has no symptoms or the child who has a minimal spondylolisthesis and no symptoms.

Most patients with spondylolisthesis should avoid activities that might cause more stress to the lumbar spine, such as heavy lifting and sports activities like gymnastics, football, competitive swimming, and diving. Patients, or their parents, must discuss their daily activities and hobbies with their physician to see if they are all right to continue.

2. Rest/activity restrictions



Rest following an injury to the back is used less and less because of the risk of deconditioning (e.g., loss of muscle tone which delays recovery). Ten years ago, one of your friends may have had a similar back problem and was placed on bed rest for at least ten days. We now know that a shorter period of time, such as two to three days followed by a guided physical therapy program is a better solution to back pain.

Once the spondylolisthesis has been recognized, treatment often consists of a short rest period (two to three days) followed by a physical therapy program by a registered physical therapist who has an understanding of spondylolisthesis.

There should be restriction of heavy lifting, excessive bending, twisting or stooping and avoidance of any work or recreational activities that causes stress to the lumbar spine. Your physician will outline a rehabilitation program to return you to your activities as soon as possible.

It is in your best interest to closely follow the activity program as outlined by your physician, nurse, or therapist to restore your best level of functioning as soon as possible. If your work requires heavy lifting, bending, or stooping, you will not be able to return to that type of work immediately. Specific work restrictions should be discussed with your employer so that a less demanding job may be found for you.

Remember, participating in daily activities are important to both your long-term physical and emotional well-being. While you may not be allowed to participate in some of your favorite sports activities, your physician, nurse, or therapist can help you identify activities that you can participate in, such as swimming, walking in water (i.e., hydrotherapy), and land walking, in addition to your physical therapy program.

3. Medication

Many medications are available to help reduce pain. Your physician may prescribe their use, generally to reduce:

- i. inflammation
- ii. muscle spasms
- iii. pain

4. Corset/Brace

In certain situations, a corset or brace is useful to provide additional support to the spine. This support may decrease muscle spasm and pain.

Corsets consist of soft fabric and may include rigid supports. Corsets can be obtained either through your physician, orthotist (i.e., a person trained to make orthopaedic braces), medical supply company, or pharmacy. Normally a corset is worn when you are up and about, but is often not necessary when you are lying in bed.

Braces are made of plastic and can be ready-made or custom fit. Ready-made braces are appropriate in those patients whose lumbar spine has a near normal contour. If there is a marked forward slip of your vertebra, ready-made braces are often difficult to fit and wear. Some physicians opt for custom-made lumbar braces (orthoses) for all of their patients with spondylolisthesis.



If you require a custom-molded orthosis you will need to see an orthotist. The orthotist will take measurements and apply a cast to make a mold of your body. A custom brace will then be made for you.

5. Surgery

Surgery may be recommended for your condition if nonoperative measures (e.g., rest, therapy, bracing), have not improved your condition.

Surgeons may try conservative approaches in some cases, such as bracing, before proceeding to surgery. In the most advanced cases surgeons will probably recommend surgery as the first course of treatment.

Read more about spondylolisthesis at spineuniverse.com