

Adult Isthmic Spondylolisthesis

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What is adult isthmic spondylolisthesis?

The spine is made up of a series of connected bones called vertebrae. In about 5% of the adult population there is a developmental disruption in one of the vertebra, usually at the point at which the lower (lumbar) part of the spine joins the tailbone (sacrum). It may develop as a stress fracture. Due to the constant forces the low back experiences, this fracture does not always heal as normal bone. This type of fracture (called a spondylolysis) is simply a crack in the vertebra and may cause no problem at all. However, sometimes the disrupted vertebra does slip forward over the vertebra below it. This is known as adult isthmic spondylolisthesis.

What are the symptoms?

Isthmic spondylolisthesis may not cause any symptoms at all despite the slippage. However, if symptoms do occur they may include low back and buttock pain, numbness, tingling, muscle tightness, radicular pain (sciatica), or weakness in the leg. These symptoms are usually aggravated by standing, walking, and other activities, while rest may provide temporary relief.

Studies have shown that 5-10% of patients seeing a spine specialist for low back pain will have either a spondylolysis or isthmic spondylolisthesis. However, since isthmic spondylolisthesis is not always painful, the presence of a crack (spondylolysis) or slip (spondylolisthesis) on the x-ray does not mean that this is the source of your symptoms.

How is it diagnosed?

A history and physical examination followed by an x-ray of your low back may be sufficient to diagnose the problem. Sometimes, however, it is difficult to see a crack and/or slippage on an x-ray and additional tests may be needed. A computed axial tomography (CAT) scan can show a crack or defect in the bone more clearly. A magnetic resonance imaging (MRI) study may be ordered to clearly show the soft tissue structures of the spine (including the nerves and discs between the vertebrae) and their relationship to the cracked vertebra and the slip. It may also show whether any of the nearby discs in the spine have suffered any wear and tear or degeneration.

What are the available treatments?

If we have determined that a spondylolisthesis is causing your pain, we will, in general, try some non-surgical treatments at first. These treatments may include a short period of rest, anti-inflammatory medications (orally or by injection) to reduce the swelling, analgesic drugs to control the pain, bracing for stabilization, and physical therapy and exercise to improve your strength and flexibility so you can return to a more normal lifestyle. If a combination of medication and therapy fails to provide relief, however, we may order additional tests which will provide greater detail to aid in further treatment of the problem.

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What about medications and pain management?

We may use one medication or a combination of medications as part of your treatment plan. Medications used to control pain are called analgesics. Most pain can be treated with non-prescription medications such as aspirin, ibuprofen, naproxen, or acetaminophen. Some analgesics, referred to as non-steroidal anti-inflammatory drugs (or NSAIDs) are also used to reduce swelling and inflammation that may occur. These include aspirin, ibuprofen, naproxen, and a variety of prescription drugs. If you are given analgesics or anti-inflammatory medications, you should be aware of potential side effects such as an upset stomach and gastric bleeding. Chronic use of prescription drugs, over-the-counter analgesics, or NSAIDs should be monitored by your family doctor for the development of any potential problems.

If you have severe persistent pain that is not relieved by other analgesics or NSAIDs, narcotics may be prescribed for a short time. Take only the medication amount that is prescribed.

There are other medications that also have an anti-inflammatory effect. Corticosteroid medications, either orally or by injection, are often prescribed for more severe back and leg pain. Corticosteroids, like NSAIDs, can have side effects. The risks and benefits of this medication should be weighed carefully.

Selected spinal injections, or blocks, may be used to relieve symptoms of pain. These are injections of corticosteroid into the epidural space (the area around the spinal nerves) or facet joint (the joint between two vertebrae) performed by a doctor with special training in this technique. The initial injection may be followed by one or two more injections at a later date. These are most often done as part of a comprehensive rehabilitation and treatment program.

Are there other non-surgical treatments?

As you begin a physical therapy regimen and/or exercise program, you may be prescribed therapies such as ultrasound, electrical stimulation, hot packs, cold packs, and manual therapy to reduce your pain and muscle spasms. At first, the exercises you learn may be gentle stretches or posture changes to reduce the back pain or leg symptoms. When you have less pain, more vigorous aerobic exercises (such as stationary bicycling or swimming) combined with strengthening/ stretching exercises will likely be used to improve flexibility, strength, endurance, and the ability to return to a more normal lifestyle. Developing your low back and abdominal muscles will help stabilize your spine and support your body. Exercise instruction should start as soon as possible and be modified as recovery progresses. Learning and continuing an exercise and stretching program are also important parts of treatment, as is maintaining a reasonable body weight.

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The presence of this **cracked vertebra** (spondylolysis) or **slippage** (spondylolisthesis) by itself usually does not represent a dangerous condition in the adult. Therefore, treatment is aimed at pain relief and increasing the patient's ability to function. Although none of the non-surgical treatments will correct the **crack** or **slippage**, they can provide long-lasting pain control without requiring more invasive treatment. A comprehensive program may require three or more months of supervised treatment.

What if I need surgery?

Surgery is reserved for a small percentage of patients whose pain cannot be relieved by non-surgical treatment methods. The pain may be caused by a pinched nerve, movement of the unstable cracked vertebra, or from nearby discs which have degenerated. If a spinal nerve is being compressed by the forward slip, surgery may be needed to create a **tunnel**, or space, for the nerve.

In addition to relieving pressure on a nerve around the crack or slippage, a stabilizing procedure or fusion may be recommended. This will stop any further slippage of the vertebra and also prevent recurrent pressure on the nerve. A fusion can be performed from the front (through the abdomen) or the back (posterior approach). Both require the placement of bone graft or bone graft substitute and/or instrumentation between the vertebrae being fused. The choice of approach for the fusion (front/back) is influenced by many technical factors including the need for spur removal, location of the spurs, anatomic variation between patients, and the experience of your surgeon. The success rate of fusion surgery for relief of isthmic spondylolisthesis is over 75%. After surgery you will remain in the hospital for at least a few days, and most patients are able to return to work within 6-9 months. A thorough postoperative rehabilitation program is advisable to help you resume your normal activities of daily living.