Adult Degenerative Scoliosis

What is Adult Degenerative Scoliosis?

Adult degenerative scoliosis (ADS) is a form of degeneration of the spine where progressive disc degeneration and arthritis in the spine results in a loss of normal curvature and an increase in abnormal curvature, most commonly in the lower/lumbar spine. This process, when it occurs, typically begins around the age of 50 and, on average, becomes symptomatic (i.e. causes pain or dysfunction) around age 70. Studies have suggested that 68% of individuals over the age of 60 have ADS and this percentage goes up with increasing age.

What causes ADS?

With aging, the discs in the spine lose their ability to retain nutrients and water which results in loss of the ability of the disc to absorb stress. This causes wear and tear in the lining of the disc, called the annulus. While this happens in all adults to some degree, there are some factors that can result in earlier or more severe degeneration such as smoking or obesity. Conversely, there are some factors shown to be somewhat preventative such as cardiovascular exercise. When the process results in asymmetric collapse of one or more discs this can cause an abnormal curvature in the spine. This, in turn, can result in more rapid asymmetric degeneration. The average yearly angular change in ADS is estimated at 3 degrees per year. As this process progresses, arthritic bone spurs can develop and the ligaments in the spine can buckle, both of which can potentially result in pinching of nerves.

What are the symptoms of ADS?

The most common symptom is due to spinal stenosis in a constellation of symptoms known as neurogenic claudication which occurs in 90% of symptomatic ADS patients. This is usually described as back pain with heaviness or pain in the legs when standing or walking and relieved by leaning forward or sitting. Back pain not due to spinal stenosis is present in about 60-80% of patients. This can be due to arthritic changes in the facet joints, disc degeneration, and lack of appropriate curvature in the low back which results in patients having difficulty standing upright. Leg pain from pinched nerves (aka radiculopathy) is present in 47-78% of patients.

How do you treat ADS?

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If the symptoms are not severe, physical therapy is often recommended as a first step in treatment. While there is little evidence that this will provide long-term relief in most patients with ADS, it can improve strength and function even if surgery is the ultimate treatment. At times injections can be helpful to diagnose the cause of leg pain if it is not obvious. While injections can sometimes relieve the pain, it has been suggested that there should be 3 weeks between injections and a maximum of 3-4 injections in a 6-12 month period.

In some cases, surgery is the recommended treatment. But the decision for surgery should not be taken lightly, especially in older patients with numerous medical conditions that can result in increased risks from surgery. In some cases, a small surgery such as a decompression (where some bone and ligaments are removed to make space for pinched nerves) can provide significant relief of pain. In other cases, decompression alone is not enough and a fusion is recommended along with the decompression which involves placing screws, rods and other implants to correct and stabilize the spine. Sometimes a small, focal fusion can be successful. Other times, the amount of degeneration of the spine or the severity of the curvature or deformity is such that a much larger fusion would be required for success. To determine the appropriate surgery requires a number of special imaging studies including CT scans, MRIs and special xrays. These also help plan the appropriate patient-specific correction of the spine. Often a bone density test (DEXA scan) will be obtained to determine if the bones are strong enough to place screws and rods. If not, then you may be referred to a specialist who might start special medications to help with bone density.

What are the risks of the surgery?

Risks common to all spine surgery include nerve irritation or nerve injury (rare), spinal fluid leak, fracture of the bone, failure of the two bones to heal/fuse together (known as pseudarthrosis) which can lead to broken rods or screws (known as hardware failure), increased stress on nearby non-fused levels that might occur over time – all of which might require additional surgeries. The odds of having some type of complication such as an infection, blood clot, pneumonia, etc increase not only with age but also with the size of the fusion and magnitude of the surgery.

What is the recovery like?

Each patient's recovery is unique and depends on a number of factors such as age, fitness, medical history, and preoperative pain medication requirement. The recovery can vary significantly patient to patient and depends on the specific surgery recommended. In the case of a smaller decompression surgery some patients can discharge home from the recovery room. However, in large fusion surgeries patients may require some time in the intensive care unit and then several days in the hospital prior to discharging to home or to a rehab facility. The larger fusion surgeries certainly result in a prolonged recovery period. The first 6 weeks are recovering from the pain of the surgery and increasing daily activities such as walking. 6 weeks to 3 months is spent starting physical therapy to get the legs and back strong. It can be 6-12 months before you return to full strength and that is typically when patients are happiest about their overall improvement from the surgery.

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How should I prepare for my surgery?

The most important thing is to stay active leading up to surgery. Eat a healthy, well-balanced diet with plenty of protein (often adding additional protein shakes is a good idea). Be sure to keep up whatever cardiovascular exercise you can tolerate such as walking, biking, elliptical etc. If you are able to add a plank-based core routine to help tighten up the muscles around your spine that will also be beneficial. If you are already taking prescription pain medications, you will likely be instructed to try to decrease your overall dose or stop them completely for at least 2 weeks prior to your date as this will help with your pain management following the surgery. If you take other prescription medications, blood thinners, or over the counter supplements you should receive specific instructions on which medications to stop taking and when to stop taking them before your surgery.

Most importantly, as much as your recovery is a physical experience, for many it is also a mental and emotional experience as well. You have to be prepared for some discomfort, for some hard work, and for some mental and emotional toughness as you begin your journey to recovery. It is a process, with highs and lows, excitement and frustration – but ultimately it is about buying into the part you play in your recovery and in you eventually achieving your specific goals for your spine, your health, and your overall well-being.