

ADULT SCOLIOSIS

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Adult scoliosis is defined as a curvature of the spine greater than 10 degrees in a skeletally mature patient (essentially any individual greater than the age of 20). Unlike pediatric scoliosis conditions, adult scoliosis patients often present with symptoms associated with back pain, leg pain or both. The reason for this is that arthritis and nerve entrapment syndromes such as spinal stenosis often occur in the adult population. The treatment of adult deformity can be more challenging than that of adolescent deformity for several reasons. Adult curves demonstrate greater curve stiffness, often have advanced degenerative changes, are associated with multiple medical comorbidities (including cardiac disease, diabetes and obesity), require the need for neural element decompression, are associated with patients with osteopenia or osteoporosis, usually involves sagittal (front to back) and coronal (side to side) plane imbalance, and often require longer fusions with longer surgical times.

There are 2 types of adult scoliosis patients. The first is an adult idiopathic scoliosis patient and the second is a de novo or degenerative scoliosis patient. Adult idiopathic scoliosis patients have been diagnosed with scoliosis during their childhood and now present for evaluation in a skeletally mature state. Adult idiopathic scoliosis can be associated with or without degenerative changes as well. De novo or degenerative scoliosis has its onset in adulthood. This form of scoliosis usually develops secondary to degenerative changes of the lumbar spine and usually occurs in elderly patients. The prevalence of de novo scoliosis is roughly 6 to 7%, and the average age at which symptoms develop is usually the 6th or 7th decade of life. Both adult idiopathic and de novo scoliosis conditions are evaluated initially with x-rays. All patients should have initial PA and lateral 36-inch long cassette radiographs to evaluate their entire spinal column. Thoracic curves greater than 50 degrees in adults progress on the average of 1 degree per year, and lumbar curves in a degenerative scoliosis patient often progress 3 to 4 degrees per year. Curves seen in this range in individuals who are relatively healthy will often require operative treatment. Smaller curves and those patients deemed medically unfit to tolerate surgery are placed through a course of non-operative treatment. Non-operative treatment can consist of oral medications, injections, physical therapy, and symptomatic bracing.

The operative treatment of adult scoliosis depends on curve type, magnitude, flexibility, and spinal balance. This often involves large fusions spanning the entire deformity. The surgical goals in the adult population are fivefold:

1. To improve or restore coronal and/or sagittal imbalance.
2. To correct and stabilize a progressive spinal deformity
3. To obtain a solid arthrodesis (fusion of the spinal deformity).
4. To decompress the neural elements associated with the claudication (nerve root compression) symptoms.
5. To relieve the patient's pain.

Technology and surgical advances have come a long way allowing for these complicated surgeries to be performed in a safe and effective manner to optimize patient's results and long-term outcomes.