

Scoliosis

What is Scoliosis?

Scoliosis is a condition of the spine that affects the side-to-side curves. These abnormal curves of the spine can make the patients shoulders, hips and/or waist appear uneven from the rest of the body, as shown in image 2.

How Does Scoliosis Occur?

Scoliosis is most commonly and idiopathic disease, however, some other diseases can tend to be the cause of scoliosis in some patients. These types are referred to as Neuromuscular Scoliosis and Syndromic Scoliosis.

Neuromuscular Scoliosis

Neuromuscular Scoliosis is associated with diseases such as Cerebral Palsy, Spinal Muscle Atrophy, Angleman Syndrome, and/ or trauma to the spinal cord.

Syndromic Scoliosis

Syndromic Scoliosis is associated with myopathic disorders such as muscular dystrophy, poliomyelitis, arthrogryposis, and spina bifida. Some connective tissue diseases such as Marfan Syndrome can also be linked to scoliosis.



Image 1. Radiograph of the entire spine showing scoliosis.

Who Does Scoliosis Affect?

Scoliosis can affect anyone, but is more common in women. It is unknown why that is, but it is believed to be because of an increase in Leptin and Sympathetic Nervous System (SNS) activity, which also affects a patients' weight (women with scoliosis tend to have lower BMI. The hormone Leptin, which is also an appetite suppressant, has been shown to affect bone growth in mice.

Signs and Symptoms

Depending on the severity of the disease, scoliosis usually does not cause any symptoms until the curvature of the spine worsens. This is usually the case in children with scoliosis. Back pain is sometimes present in severe cases of scoliosis. This is usually because the curve of the spine can cause stress and pressure on the spinal discs, nerves, muscles, ligaments or facet joints. Visual deformities such as opposite sides of the body not appearing level, head appearing off center and does not line up with the pelvis, one hip or shoulder appearing higher than the other, and one side of the chest sunken in are all also signs of scoliosis.



Image 2. Scoliosis in a patient showing severe unevenness of the shoulders from the rest of the body.

Improvements For Scoliosis

Depending on the severity of the scoliosis, options for relief and improvement include a special back brace for support, physical therapy, exercise, and in serious cases, surgical intervention may be required. As shown in image 3, surgical repair can show tremendous improvements in a patient with scoliosis.

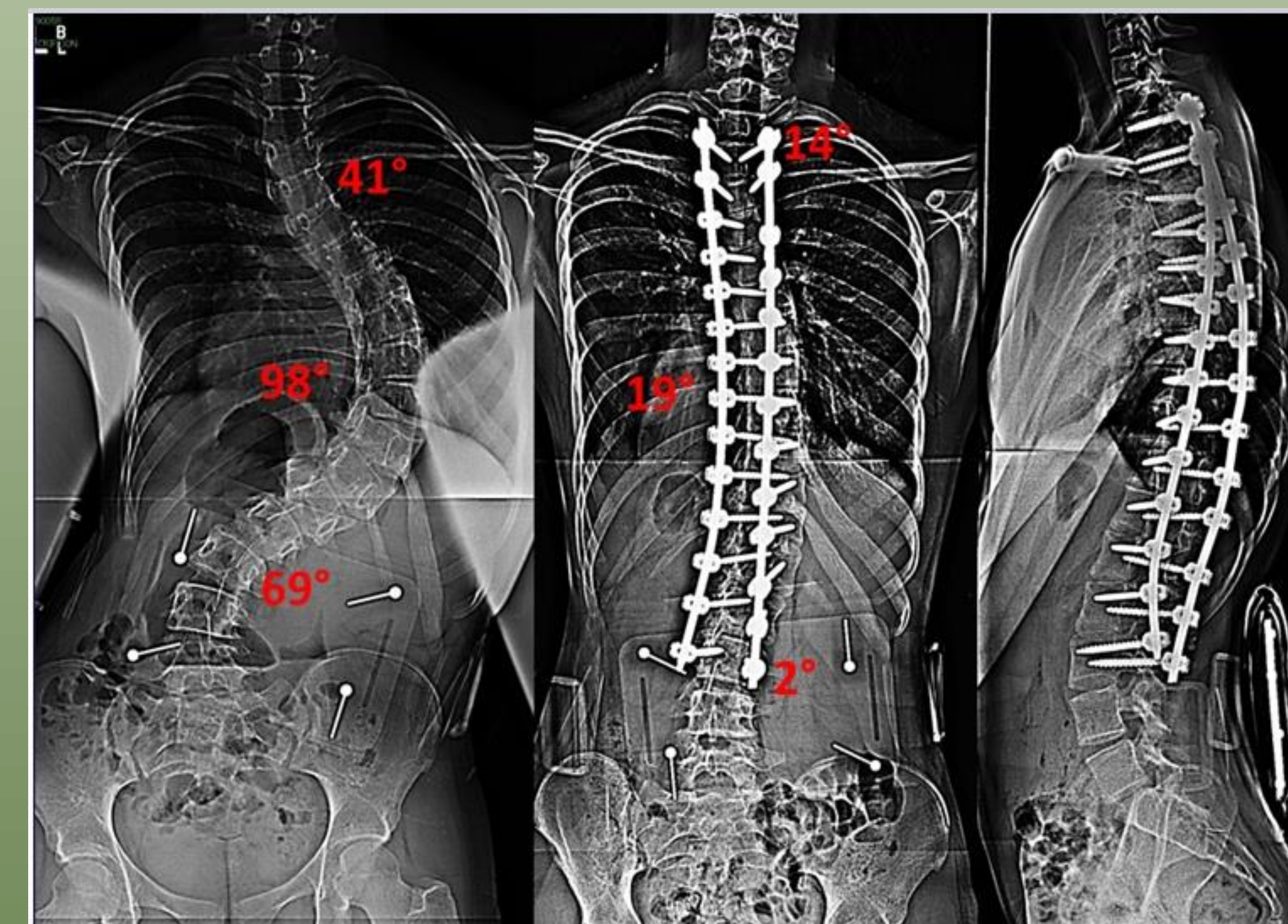


Image 3: Scoliosis surgical repair before and after pictures.

Conclusion

Scoliosis is a spinal deformity that can occur in men and women of all ages, causing lateral curvature and rotation of the vertebrae. This can lead to the patients' shoulders, hips, and waist to appear uneven from the rest of the body. The majority of scoliosis cases are idiopathic, meaning the cause is unknown. The other causes of scoliosis include trauma to the spine, or other diseases leading to scoliosis. These diseases that can lead to scoliosis are categorized into two types: neuromuscular scoliosis and syndromic scoliosis. A patient's history, physical examination and radiographs are critical in the initial evaluation of scoliosis. This will determine the severity of the condition, and also whether or not the patient will need additional options for treatment. Treatments for scoliosis are based on age, the degree of the curves, and risk of progression.

Idiopathic Scoliosis	
TYPE OF IDIOPATHIC SCOLIOSIS:	AGE RANGE:
Infantile Idiopathic Scoliosis	Ages 0-3
Juvenile Idiopathic Scoliosis	Ages 4-10
Adolescent Idiopathic Scoliosis	Ages 11-18
Adult Idiopathic Scoliosis	Patients older than 18

Chart 1. Different types of Idiopathic Scoliosis, including the affected age ranges.

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