

Scoliosis Overview - Bombay Spine Clinic

- Scoliosis

What Is It?

- Scoliosis is a condition in which the spine develops an abnormal sideways curvature when viewed from behind. Instead of appearing straight, the spine curves into an "S" shape or "C" shape. In many cases, the vertebrae may also rotate, causing asymmetry of the shoulders, chest or waist.
- Scoliosis can occur in children, adolescents and adults. While mild scoliosis may not cause significant symptoms, moderate or severe curves can lead to cosmetic concerns, pain, imbalance and, in rare cases, breathing difficulties.
- Early detection is important because some spinal curves may progress over time.
- Common Symptoms

Symptoms vary depending on the severity and type of scoliosis.

- Patients may experience:
 - Visible Signs
 - Uneven shoulders
 - One shoulder blade appearing more prominent
 - Uneven waistline
 - One hip higher than the other
 - Leaning to one side
 - Rib prominence when bending forward
 - Pain-Related Symptoms
 - Back pain
 - Muscle fatigue
 - Stiffness
 - Difficulty standing for prolonged periods
 - Advanced Symptoms
 - Progressive spinal deformity
 - Trunk imbalance
 - Reduced exercise tolerance
 - Breathing difficulty (in severe cases)

- Many children and adolescents with scoliosis have no pain and may first notice the deformity through physical appearance.

Causes & Risk Factors

- Adolescent Idiopathic Scoliosis
- The most common type.
- The exact cause is unknown and typically develops during growth spurts in adolescence.
- Congenital Scoliosis
- Present at birth due to abnormal development of spinal vertebrae.
- Neuromuscular Scoliosis
- Associated with neurological or muscular conditions such as:
 - Cerebral palsy
 - Muscular dystrophy
 - Spinal muscular atrophy
- Degenerative (Adult) Scoliosis
- Develops later in life due to age-related degeneration of discs and spinal joints.
- Risk factors include:
 - Family history
 - Female gender (higher risk of progression)
 - Rapid growth during adolescence
 - Pre-existing neuromuscular disorders
- When Should You Seek Medical Advice?
- Medical evaluation is recommended if:
 - Uneven shoulders are noticed
 - One side of the chest or ribs appears more prominent
 - The spine appears curved
 - Clothing fits unevenly
 - Progressive back deformity develops
 - Back pain becomes persistent
 - Walking balance is affected

Symptoms interfere with daily activities

- Seek Immediate Medical Attention If:
 - Progressive weakness develops
 - Significant balance problems occur
 - Breathing difficulties develop
 - Rapid curve progression is noticed
- How Is It Diagnosed?

- Clinical Examination
- A detailed examination evaluates:
 - Shoulder symmetry
 - Waist symmetry
 - Rib prominence
 - Trunk balance
 - Neurological function
 - Adam's Forward Bend Test
- A simple clinical test used to detect rotational deformity of the spine.
- X-Ray
- Standing whole-spine X-rays are the most important investigation.
- They help determine:
 - Curve severity
 - Curve location
 - Skeletal maturity
 - Progression risk
- The degree of curvature is measured using the Cobb Angle.
- MRI
- MRI may be recommended when:
 - Neurological symptoms are present
 - Congenital scoliosis is suspected
 - Atypical curve patterns are identified
- CT Scan
- Occasionally required for detailed evaluation of complex deformities.
- Blood Tests
- Usually not required unless underlying medical conditions are suspected.

Treatment Options

- Non-Surgical Treatment

Treatment depends on:

- Patient age
- Curve severity
- Skeletal maturity
- Risk of progression
- Non-surgical management may include:
 - Observation and regular monitoring

- Physiotherapy
- Scoliosis-specific exercises
- Postural training
- Bracing (in selected growing children)
- The aim is to prevent progression and maintain function.
- Surgical Treatment
- Surgery may be considered when:
 - Curves continue to progress
 - Significant deformity develops
 - Severe curves are present
 - Balance becomes affected
 - Pain becomes disabling
 - Lung function may be compromised
- Common surgical procedures include:
 - Posterior Spinal Fusion
 - Deformity Correction Surgery
 - Instrumented Scoliosis Correction
 - Growth-Friendly Procedures (in selected children)
- Modern scoliosis surgery uses specialized implants and advanced correction techniques to improve spinal alignment while preserving function.

Frequently Asked Questions

- 1. What is Scoliosis?
- Scoliosis is an abnormal sideways curvature of the spine.
- 2. Can poor posture cause Scoliosis?
- No. Poor posture may make spinal asymmetry appear worse but does not cause true structural scoliosis.
- 3. Is Scoliosis hereditary?
- Family history can increase the risk of developing scoliosis.
- 4. Can adults develop Scoliosis?
- Yes. Degenerative scoliosis can occur due to age-related changes in the spine.
- 5. Does every patient need surgery?
- No. Most patients do not require surgery and can be managed with observation, exercises or bracing.
- 6. What is a Cobb Angle?
- The Cobb Angle is the standard measurement used to assess the severity of scoliosis.
- 7. Can exercises cure Scoliosis?
- Exercises may improve posture, strength and function, but they do not completely correct a structural spinal curve.
- 8. Is Scoliosis painful?

- Many adolescents have no pain. Adults may develop pain due to degeneration and imbalance.
- 9. Can Scoliosis worsen with time?
- Yes. Some curves may progress, particularly during periods of rapid growth or due to adult degeneration.
- 10. Is surgery safe?
- Modern scoliosis surgery is highly specialized and, when appropriately indicated, can provide significant improvement in alignment, balance and quality of life.
- Related Conditions
- Kyphosis
- Osteoporosis
- Spinal Fracture
- Ankylosing Spondylitis
- Myelopathy
- Degenerative Spine Disorders
- When Should You Consult a Spine Specialist?
- If you notice spinal curvature, uneven shoulders, trunk imbalance, persistent back pain or concerns regarding scoliosis progression, early consultation with a spine specialist can help establish an accurate diagnosis and determine the most appropriate management plan.
- Early detection is particularly important in children and adolescents, where timely intervention may help prevent progression of the deformity.
- Need Expert Advice?
- Book a consultation with Dr. Siddharth Katkade or upload your X-rays/MRI for review through our Patient Resource Centre.

Need Clinical Evaluation or Second Opinion?

This educational document was prepared by **Dr. Siddharth Katkade**. For appointments or to share MRI scan reports for clinical review, call **+91 88507 73095** or consult at Byculla (E) / Khar (W) clinics.