Anterior spinal growth tethering is a contemporary treatment method for skeletally immature patients with idiopathic scoliosis.

What is the association between changes in screw angulation and overall height after anterior spinal growth tethering?

Rate of Scoliosis Correction After Anterior Spinal Growth Tethering for Idiopathic Scoliosis

Takahashi et al. (2021)  |  DOI: 10.2106/JBJS.20.02071

Postoperative duration

<1 year  |  1 to 2 years  |  >2 to 3 years  |  >3 years

Group 1: Sanders stage-2  |  Group 2: Sanders stage-3

Assessment of rate of change of:

- Each segment’s screw angulation
- Height velocity

Rate of change for each segment’s screw angulation (degrees/month)

- $-0.16^\circ$ for <1 year
- $-0.14^\circ$ for 1 to 2 years
- $-0.05^\circ$ for >2 to 3 years
- $0.03^\circ$ for >3 years

Rate of change of height velocity (cm/month)

- $0.65$ for <1 year
- $0.57$ for 1 to 2 years
- $0.30$ for >2 to 3 years
- $0.19$ for >3 years

After anterior spinal growth tethering, changes in screw angulation were associated with height increase

- Rate for group I (2.8° per segment per year)
- Rate for group II (1.2° per segment per year)

Group I continued for 3 years
Group II continued for 2 years

Surgical timing that depends on patient’s skeletal maturity influences proper postoperative correction after anterior spinal growth tethering.